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Environmental Impact Study - Woodview Golf Course Subdivision

Peterborough County, Ontario

Palmer Project #
2204601

Prepared For
Eric Challenger

December 21, 2022

December 21, 2022

Eric Challenger
Woodview Golf
65 Northey's Bay Road
Woodview, ON K0L 3E0

Dear Eric Challenger:

Re: Environmental Impact Study - Woodview Golf Course Subdivision Course Subdivision
Project #: 2204601

Palmer is pleased to submit the attached Environmental Impact Study (EIS) for the proposed Plan of Subdivision Application at 65 Northey's Bay Road (Woodview Golf) in Woodview, Ontario. Based on the findings and recommendations of the report, it is our opinion that with the implementation of the mitigation measures as provided, the proposed development is environmentally feasible and no negative impacts to the natural environment features identified are expected. Please let us know if you have questions or comments on this submission.

Yours truly,

Austin Adams, M.Sc., EP
Senior Ecologist

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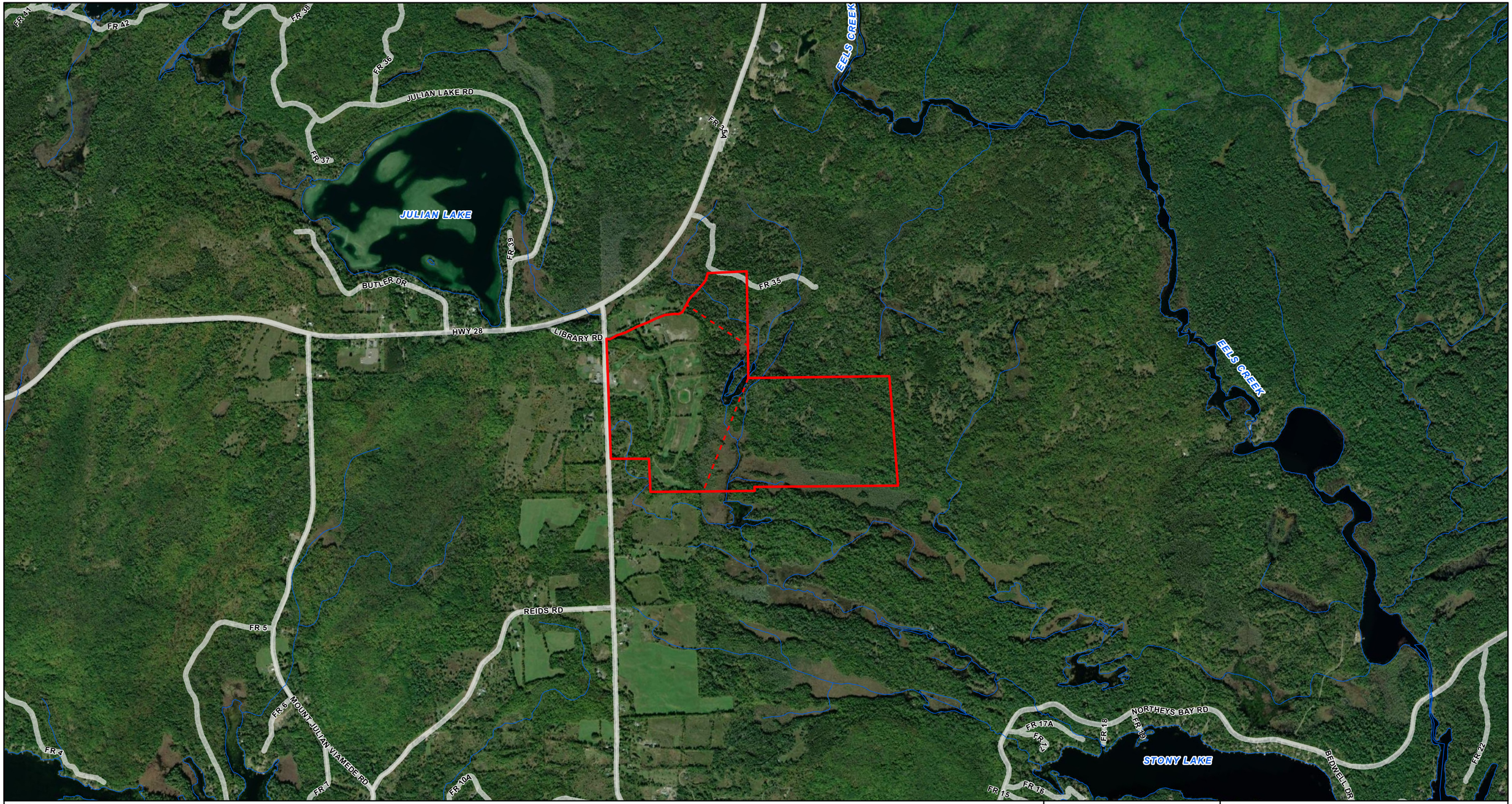
1. Introduction

Palmer is pleased to provide this Scoped Environmental Impact Study (EIS) for 65 Northey's Bay Road, Woodview, Township of North Kawartha, Peterborough County, Ontario (the Subject Property – **Figure 1**). This EIS has been completed as part of a Subdivision Application and Zoning By-law Application related to the proposed construction of lots for 56 single residential lots, a commercial lot, a related stormwater management pond and outfall, laneways and recreational space.

The Subject Property comprises an area of approximately 121.84 hectares (ha) and largely consists of natural areas with a nine-hole golf course and driving range in the western portion. The proposed subdivision is limited to this western portion of the Subject Property (the Study Area – **Figure 1**). Two existing residential dwellings are found at the northern boundary of the Subject Property. The natural areas in the eastern portion of the Subject Property consists of woodlands, unevaluated wetlands, a waterbody, and watercourses.

The objective of this EIS is to provide a background review, desktop analysis, and field survey to assess the natural heritage features and functions of the Subject Property, assess potential impacts from the proposed development, and provide mitigation measures where appropriate. Investigations and impact assessment for the EIS focus primarily on the natural features located in closest proximity to components of the proposed development.

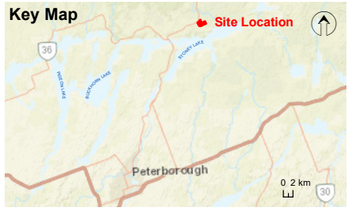


LEGEND

- Watercourse [1]
- Study Area
- Subject Property

1. Ontario Hydro Network (OHN)

Key Map



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Date: Dec 20, 2022

NORTH

Source Notes:
Base imagery (2017) provided by ESRI basemapping services.

CLIENT
Eric Challenger

PROJECT
Woodview Golf Course Subdivision

TITLE
Site Location

Palmer

REF. NO. 2204601-1-2

Figure 1

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2. Policy Framework

Relevant planning policies, legislation, and regulatory requirements pertinent to this assessment are summarized in the following sections. The general relevance of these policies to the Subject Property is also noted. More detailed analysis of policy implications is provided in subsequent sections of this report where relevant.

2.1 Provincial Policy Statement

The *Provincial Policy Statement, 2020* (PPS) provides direction to regional and local municipalities regarding planning policies for the protection and management of natural heritage features and resources (Ontario Ministry of Municipal Affairs and Housing, 2020). The PPS defines eight types of Natural Heritage Features (NHF) and adjacent areas and provides planning policies for each. Of these NHF, development is not permitted in:

- Significant Coastal Wetlands;
- Significant Wetlands in Ecoregions 5E, 6E and 7E;
- Fish Habitat, except in accordance with provincial and federal requirements; or
- Habitat of species designated as Endangered and Threatened, except in accordance with provincial and federal requirements.

Additionally, unless it can be demonstrated through an Environmental Impact Study (EIS) or similar document, that there will be no negative impacts on the natural features or their ecological functions, development and site alteration are also not permitted in:

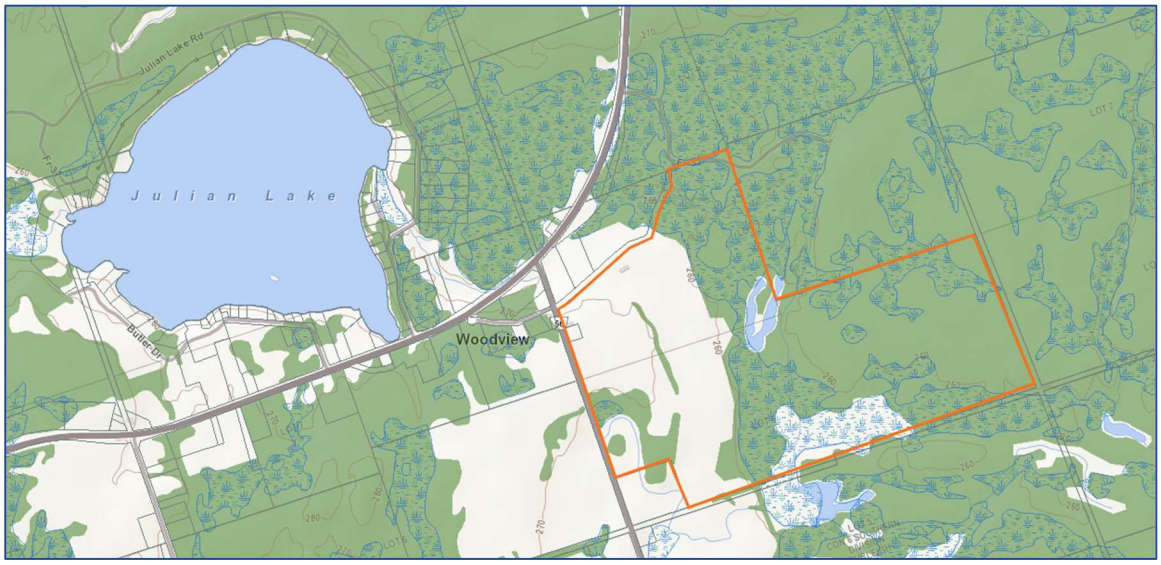
- Significant Wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);
- Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River);
- Significant Wildlife Habitat;
- Significant Areas of Natural and Scientific Interest (ANSI);
- Other Coastal Wetlands in Ecoregions 5E, 6E and 7E; and
- Lands defined as *Adjacent Lands* to all the above natural heritage features.

Each of these natural heritage features is afforded varying levels of protection subject to guidelines, and in some cases, regulations.

Site-specific Relevance of the PPS

- There are woodlands and wetlands, primarily to the east of the Study Area that are to be evaluated and/or protected in a manner consistent with the PPS.
- Species at Risk (SAR) have been identified for the Subject Property, and habitat(s) of species designated as Endangered and Threatened must be identified.

- The Study Area is divided into Ecoregion 6E to the west and Ecoregion 5E to the east. As the area has been brought into the Woodview Settlement Area to the west (Sections 2.2 and 2.3), Ecoregion 6E has been applied for this project.



Map A. MNRF map of Subject Property (Orange) - Proposed Subdivision is limited to the west side (white area). Woodlands (green) and wetlands (blue texture) are present, but not PSW.

2.2 Growth Plan for the Greater Golden Horseshoe (2019)

Previously, the boundaries of the Growth Plan for the Greater Golden Horseshoe divided the Study area, with Growth Plan Natural Heritage System (NHS) comprising the eastern half (Ministry of Municipal Affairs and Housing, 2020). However, the recent Woodview Settlement Area adjustment was approved, placing the entirety of the golf course area within settlement area boundaries. While this brings the golf course outside the Growth Plan NHS, Natural Heritage Features are still to be considered in a manner consistent with the PPS (Ministry of Municipal Affairs and Housing, 2020).

2.3 County of Peterborough Official Plan (2022)

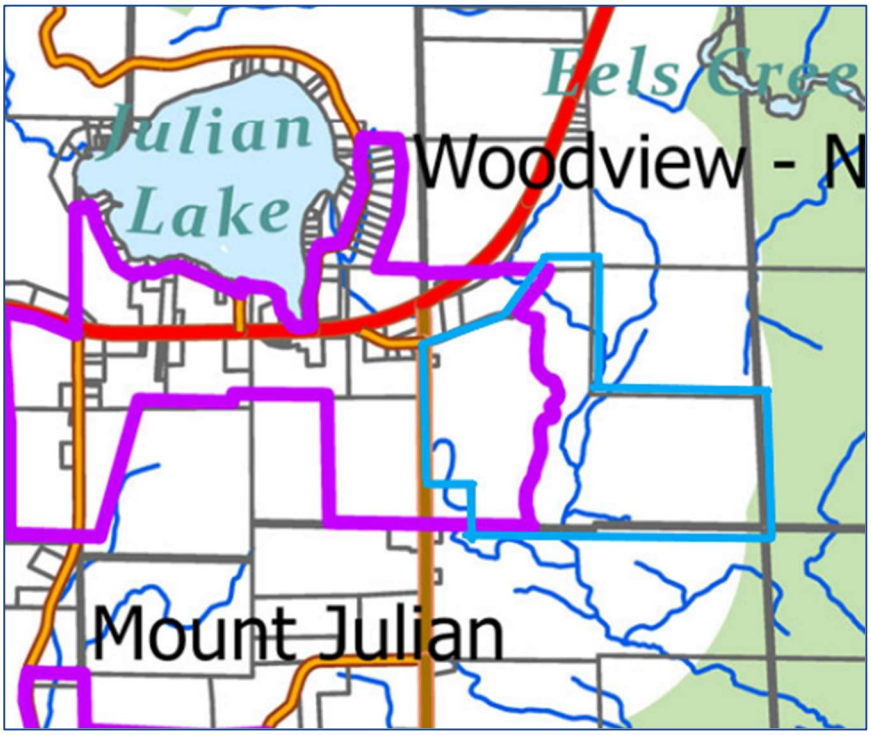
The County of Peterborough have adopted a new Official Plan, which is awaiting approval by the Ontario Ministry of Municipal Affairs and Housing (Peterborough County, 2022). The Natural Heritage Feature and Natural Hazard policies of the new OP *are designed to protect and enhance the natural heritage systems found across the County, as well as manage natural hazards which may represent a risk to health and/or safety or may pose constraints to development*. This application is filed under this new OP, which places the entirety of the Study Area within the Settlement Area, and the majority of the Subject Property outside the Natural Heritage System (NHS) overlay (**Map B**). Natural Heritage Features within the County include:

- Significant wetlands
- Fish habitat
- Significant woodlands
- Habitat of endangered species and threatened species
- Significant wildlife habitat
- Significant valleylands

- Significant areas of natural and scientific interest (ANSI)
- Sand barrens, savannahs, tallgrass prairies, and alvars (if identified)

Outside the NHS overlay, and within *settlement areas* and *rural settlements development*, most of these natural heritage features are to be protected in accordance with the Provincial Policy Statement (PPS) and the policies of the OP. Meaning, that it must be demonstrated by means of an EIS or Natural Heritage Evaluation (NHE) that there will be *no negative impacts on the natural features or their ecological functions*, or in accordance with provincial and federal requirements (as applicable). For wetlands, development is not permitted within any wetland or within a 15 m *vegetation protection zone* (VPZ), though an alternative VPZ distance may be recommended in an EIS/NHE the takes into consideration the specifics of the site.

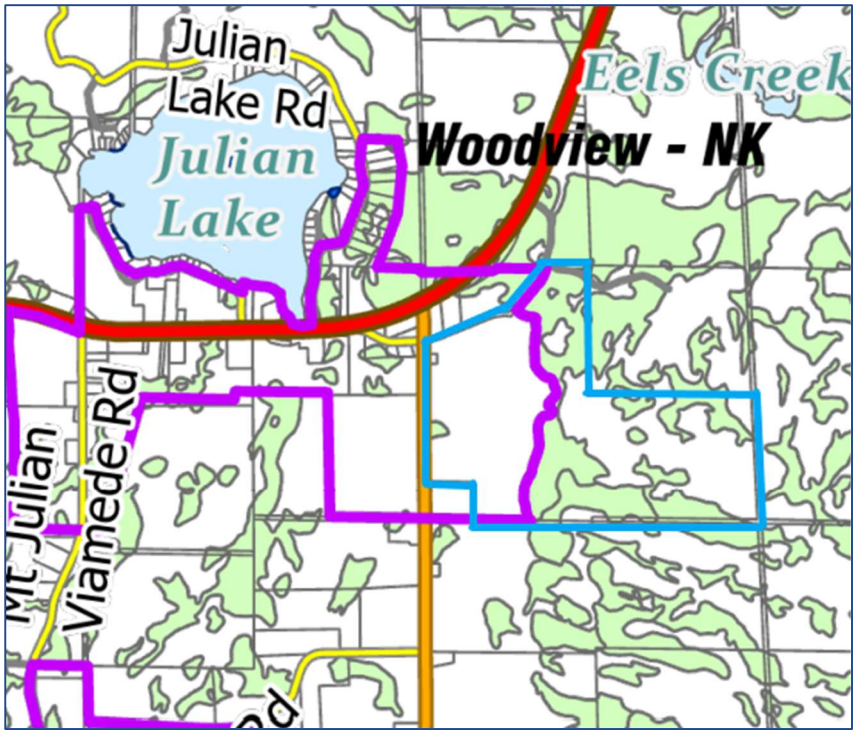
The Township of North Kawartha currently utilizes the County OP for planning policies.



Map B. Peterborough County Land Use Plan Schedule – County's Proposed Refined NHS. Shows the Study Area within the Settlement Area (purple) and the majority of the Subject Property outside the NHS (green).

Site Specific Relevance of the County of Peterborough OP

- The North Kawartha Environmental Schedule identifies an Environmental Constraint Area (ECA) to the east of the Study Area, being non-evaluated wetlands subject to verification (**Map C**), which correspond with the wetlands shown on **Map A**. Associated watercourses are shown on **Map B**.
- The OP directs development to be consistent with the policies of the PPS.



Map C. North Kawartha – Environmental Schedule, showing non-evaluated wetland subject to verification (ECA) to the east of the Study Area, and a small wetland to the west side.

2.4 Endangered Species Act (2007)

Species designated as Endangered or Threatened by the Committee on the Status of Species at Risk in Ontario (COSSARO) are listed as Species at Risk in Ontario (SARO). These species at risk (SAR) and their habitats (e.g., areas essential for breeding, rearing, feeding, hibernation and migration) are afforded legal protection under the *Endangered Species Act*, 2007 (ESA). This Act is administered by the Ministry of Environment, Conservation and Parks (MECP).

The protection provisions for species and their habitat within the ESA apply only to those species listed as Endangered or Threatened on the SARO list, being Ontario Regulation 230/08 of the ESA (Government of Ontario, 2007). Species listed as Special Concern may be afforded protection through policy instruments respecting significant wildlife habitat (e.g., the PPS) as defined by the Province or other relevant authority, or other protections contained in Official Plan policies.

Site Specific Relevance of the ESA

- The Study Area must be evaluated for habitats of SAR, in order to protect habitat(s) of species designated as Endangered and Threatened.

2.5 Migratory Birds Convention Act

The *Migratory Birds Convention Act*, MBCA (1994) and *Migratory Birds Regulations*, MBR (2014), together with the provincial *Fish and Wildlife Conservation Act* (1997), protect most species of migratory birds and their nests and eggs anywhere they are found in Canada. General prohibitions under the MBCA and MBR protect migratory birds, their nests and eggs and prohibit the deposit of harmful substances in waters /

areas frequented by them. The MBR includes an additional prohibition against incidental take, which is the inadvertent harming or destruction of birds, nests or eggs.

Compliance with the MBCA and MBR is best achieved through a due diligence approach, which identifies potential risk, based on a site-specific analysis in consideration of the Avoidance Guidelines and Best Management Practices information on the Environment Canada website (Government of Canada, 2018).

3. Study Approach

The approach to the EIS was determined with consideration for existing site conditions, applicable policy, and feedback received through ongoing agency liaison.

3.1 Background Review

Palmer has reviewed relevant background material to provide a focus to field investigations and ensure compliance with applicable regulations and policy. Background information collection is guided by the *Natural Heritage Information Request Guide* (Ministry of Natural Resources and Forestry, 2018). Current direction from the Ministry of Natural Resources and Forestry (MNRF) and Ministry of Environment, Conservation and Parks (MECP) is to gather natural heritage information and species occurrence records from available sources; the NHIC Make Make-a-Map application being the main source of information and records from the Ministry itself (Ministry of Natural Resources and Forestry, 2022). Information gathered is recommended to be balanced and supplemented by professional ecological review of potential habitats and characteristics of a project site.

Background review for the Subject Property included the collection of relevant mapping and reports, including regulations and policies, and Official Plans; and the NHIC Make-a-Map application for species occurrences and designated area mapping. In addition to these sources, the following data sources were reviewed for the project:

- **Natural Heritage Information Centre (NHIC):** SAR Records and natural heritage features (Ministry of Natural Resources and Forestry, 2022).
- **Land Information Ontario (LIO):** certain data types including aquatic resource area (ARA) information is available through these publicly available data layers (2022).
- **Atlas of the Breeding Birds of Ontario:** Provides range maps and other information regarding breeding birds in Ontario (Bird Studies Canada, 2020).
- **Ontario Reptile & Amphibian Atlas:** Provides range maps and other information regarding reptile and amphibian species observed in Ontario (Ontario Nature, 2022).
- **Fisheries and Oceans Canada (DFO):** The DFO maintains mapping of aquatic species at risk (SAR) habitats, including the critical habitat, occupied and contributing habitat ranges of SAR and Special Concern species (Fisheries and Oceans Canada, 2022).
- **Aerial Photography, including historical photos:** Available on-line mapping sources were reviewed to identify current potential habitat types, biogeography and terrain.

Following the *Information Request Guide*, MECP advice and direction should be solicited once Species at Risk (SAR) interactions or potential interactions are identified via field investigation and analysis.

3.2 Project Scoping

In scoping this EIS, Palmer reviewed a Preliminary Severance Review (PSR) memo for an adjacent but unrelated project of March 30, 2021, which included comments provided by Peterborough County. This memo identifies that an EIS would be required for the development, with specific emphasis on Species at

Risk (SAR), and wetlands and other hydrological features. The scope of the EIS has been developed based on these comments.

It should be noted that as the location is near Julian Lake, a Lake Capacity Review (LCR) was also initially requested; however, subsequent correspondence indicates that this LCR is no longer necessary. This is due to both the Subject Property being outside the 300 m evaluation distance outlined in Section 9.5.3.1 of the OP (Peterborough County, 2022), and water flows within the Subject Property are not directed into Julian Lake.

3.3 Ecological Surveys

A detailed ecological field investigation program has been completed as part of the EIS study, appropriate to the potential habitats and natural features of the Study Area. Seven Site Visits were completed in the 2022 growing season (**Table 1**). The following Sections provide a description of the survey methodology employed.

Table 1: Summary of Ecological Site Visits

Date	Surveys Completed
May 24, 2022	Amphibians, Turtles
June 9, 2022	General Ecology, ELC
June 10, 2022	Breeding Birds, Turtles
June 21, 2022	Breeding Birds, Turtles
June 28, 2022	Amphibians, Turtles
June 30, 2022	General Ecology, ELC, Turtles
July 27, 2022	General Ecology, ELC, Butternut Health Assessment, Turtles

3.3.1 Ecological Land Classification

Ecological field investigations were undertaken on June 9 and 30, and July 27, 2022. Vegetation communities were mapped and described following the Ecological Land Classification (ELC) System for Southern Ontario protocols (Lee, et al., 1998) and unpublished 2008 update tables. Vegetation community boundaries were delineated on field maps through the interpretation of recent aerial photographs and refined in the field. Information collected during ELC includes dominant species cover, community structure, as well as level of disturbance, presence of indicator species, and other notable features. Botanical surveys were completed by traversing the site and recording species observed in each vegetation community. Provincial plant status was based on the Rare Flora of Ontario (Oldham & Brinker, 2009) and the Natural Heritage Information Centre (Ministry of Natural Resources and Forestry, 2022).

3.3.2 Breeding Amphibians

Amphibian breeding surveys were conducted on the property. Palmer Ecologists conducted two amphibian breeding surveys on May 24 and June 28, 2022, in accordance with standard field protocols. Surveys were completed in the evenings between half an hour after sunset and midnight. Weather conditions were between 15-18°C, with low to no wind.

Species were identified by call, and an abundance code for each species heard calling was assessed by the following the Amphibian Monitoring protocol:

Code 0: No calls heard.
Code 1: Calls not overlapping or simultaneous, number of individual frogs can be counted
Code 2: Calls overlapping or simultaneous, number of individuals can still be distinguished, number of individual frogs cannot be counted, but a reliable estimate of numbers can be made based on location and call voices
Code 3: Full chorus, calls simultaneous and overlapping, numbers of calling males cannot be reasonably counted or estimated

3.3.3 Breeding Birds

Breeding bird surveys were conducted using a roving survey method whereby the entirety of the site is covered. Thus, the site was walked such that the observer was within 50 m of all parts of the site. Palmer conducted two breeding bird surveys for most bird species in southern Ontario, at least one week apart within the peak breeding season, on June 10 and June 21, 2022. Surveys were conducted between 5:30 and 10:30 a.m. to coincide with the dawn chorus. Surveys were conducted under suitable weather conditions when wind speeds were less than 20 km/h and there was no precipitation. For the Subject Property, at the start of the first survey the weather conditions were noted to be 11ºC, with a wind speed of 12 km/h, and 75% cloud cover and at the start of the second survey it was 16ºC us, with a wind speed of 0 km/h, and 90% cloud cover. The surveyor used a site map to record all bird species and individuals seen and heard in the approximate location observed.

3.3.4 Turtle Surveys

Turtle Surveys were able to be completed on six of the site visits. The surveys were completed using the *Survey Protocol for Blanding's Turtle (Emydoidea blandingii) in Ontario* as a guide (Ontario Ministry of Natural Resources and Forestry, 2015). Stations were set near high potential areas for basking turtles during peak periods, as near as possible. Scanning these areas, surveyors used binoculars to identify species.

3.3.5 Species at Risk Habitat Assessment

For the purposes of this report, Species at Risk (SAR) include species listed as Endangered, Threatened or Special Concern under Ontario's ESA. The protection provisions for species and their habitat within the *ESA* apply only to those species listed as endangered or threated on the SARO list. Special Concern species may be afforded protection through policy instruments respecting significant wildlife habitat as defined by the Province or other relevant authority, or other protections contained in Official Plan policies.

Prior to field work, existing SAR records were queried with the NHIC database and other online resources. Habitat opportunities for SAR on the site were then assessed by comparing habitat preferences of species deemed to have potential to occur against current site conditions. The species noted during the NHIC search and others known through professional experience to have potential to occur were considered in the assessment.

3.3.5.1 Butternut Health Assessment

Five (5) Butternut (*Juglans cinerea*) were observed during field investigations. Butternut is a provincially listed Endangered plant species. A Butternut Health Assessment (BHA) was completed on July 27, 2022 by a certified assessor, following the protocols outlined by the MNRF (Ministry of Natural Resources and Forestry, 2014). The results of this assessment were integrated into this EIS to ensure that the proposed development considered the requirements of the ESA, and properly mitigated any potential impacts.

3.3.6 Incidental Wildlife Observations

All incidental observations of wildlife were recorded by Palmer during field investigations. Incidental observations included direct sightings and indirect evidence such as nests, tracks, scat, and browse.

4. Existing Conditions

4.1 Topography and Ecoregions

The Study Area is generally located on tablelands above valleylands containing large tracts of wetlands (**Figure 2**). Lands within the Study Area are generally level to gently rolling. The lands fall from apparent (distinct) Tops of Banks to the east and southwest. A tableland ridgeline is found in the middle of the Study Area, being a fall to a secondary tableland with no associated watercourse.

The Study Area is technically bisected by the line that divides Ecoregion 5E and Ecoregion 6E (Crins, Gray, Uhlig, & Wester, 2009). Ecoregion 6E, the Lake Simcoe - Rideau Ecoregion is a mix of agricultural land, with deciduous and mixed forests covering a majority of the remaining natural landscape. The underlying bedrock is primarily dolostone and limestone. Many areas along the northern fringe of this ecoregion are characterized by extensive bare bedrock plains. A larger percentage of southern flora is found in this region than Ecoregion 5E. Within the Georgian Bay Ecoregion 5E, the Precambrian bedrock is frequently exposed, creating the rugged landscape associated with the region, while the vegetation is characterized by a mixture of northern and southern species.

Within the Study Area, there are outcrops of Canadian Shield suggesting Ecoregion 5E; however, flora and ecosystems remain consistent with Ecoregion 6E. Therefore, to provide a consistent EIS, Ecological Land Classification (ELC) descriptions and analysis have applied descriptions for Ecoregion 6E. However, the discussion of Significant Wildlife Habitat (SWH) includes analysis for both 5E and 6E due to potential overlap.

4.2 Vegetation Communities and Flora

The Study Area is a golf course with a home and pasture in the north portion. The margins are forested, and short slopes descend into wetlands. A marsh is found in the southwest of the Study Area, while mixedwood wetlands are found below the slope on the east side. Much of the natural treed areas are Sugar Maple (*Acer saccharum*) dominant. Within the golf course, there are areas of cultural meadows and savannahs, and planted spruce and pines. A created stormwater management pond is also found within the golf course (**Figure 2**).

4.2.1 Vegetation Communities

4.2.1.1 Terrestrial Ecosites

FOD5-6: Dry - Fresh Sugar Maple - Basswood Deciduous Forest

The ecosite is represented in the tablelands and upper slopes to west and east sides of the Study Area. The sites generally have a sparse ground cover over bedrock, and the top of banks are marked by outcrops of Canadian Shield; however, the flora expression remains descriptive of southern Ontario ecotypes. The canopy is dominated by Sugar Maple (*Acer saccharum*) and Basswood (*Tilia* americana), with Green Ash (*Fraxinus pennsylvanica*) and Northern Red Oak (*Quercus rubrum*) at 60% cover. Some Trembling Aspen (*Populus tremuloides*) is also present on the eastern side of Study Area. Sugar Maple makes up almost 100% of the denser understory (~70%) (**Photo A**), with only occasional Eastern Hop-hornbeam (*Ostrya*

virginiana). Patches of Graceful Sedge (*Carex gracillima*) and Downy Brome (*Bromus tectorum*) are found among the stones, with occasional Large False Solomon's Seal (*Maianthemum racemosum*) and Common Buttercup (*Ranunculus acris*).

Beyond the Tops of Bank, the slopes of the FOD5-6 transition to wetter types. In the west, the slopes fall to an FOD6-3 (inclusion) at base of slopes (described below). In the east, several wetland types compose the bottom lands below Top of Bank.

Photo A:FOD5-6: Dry - Fresh Sugar Maple - Basswood Deciduous Forest

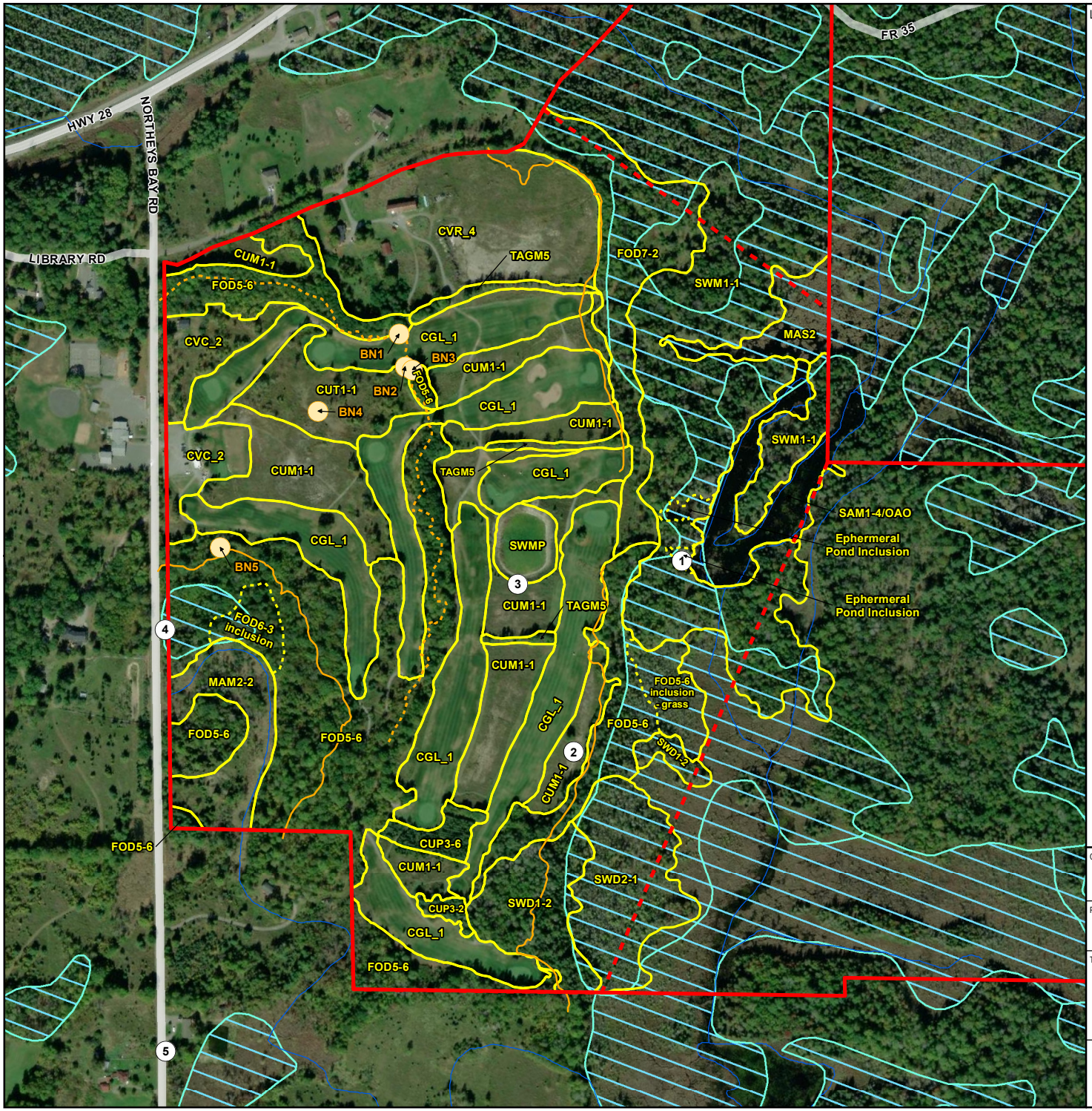
FOD5-6 (inclusion-grass): Dry - Fresh Sugar Maple - Basswood Deciduous Forest

On the east side of the Study Area, there is an area that slopes towards the wetlands that remains FOD5-6 but includes more of an open lawn of grasses and Graceful Sedge. Balsam Fir (*Abies balsamea*) is also observed amongst the Sugar Maples at this location.

FOD6-3 (inclusion): Fresh - Moist Sugar Maple - Yellow Birch Deciduous Forest

In the southwest of the Study Area, this inclusion is found within a bowl in the topography, transitioning from the FOD5-6 forest above, to the MAM2-2 wetlands below. Overall, Sterile Sedge (*Carex sterilis*) dominates ground cover at 75 – 80%, with limited other species. Above, there are larger, sparser trees than the FOD5-6 area, being Sugar Maple with White Birch (*Betula papyrifera*), Green Ash, and some areas of Eastern Hemlock (*Tsuga canadensis*).

The ground cover becomes more diverse at the wetland fringe/transition. Ephemeral ponding appears to occur in these areas, and includes Graceful Sedge, Yellow Sedge (*Carex flava*), Sensitive Fern (*Onoclea sensibilis*), Spotted Joe Pye Weed (*Eutrochium maculatum*). The fringe also includes a cover of Speckled Alder (*Alnus incana* ssp. *rugosa*) and Alternate-leaved Dogwood (*Cornus alternifolia*), some of which extends occasionally into the wetland itself.



LEGEND

- Amphibian Survey Station
- Butternut Location
- Tableland Ridgeline [1]
- Top of Bank [1]
- Watercourse [2]
- ELC Community
- ELC Inclusion
- Study Area
- Subject Property

ELC LEGEND

Terrestrial Ecosites

FOD5-6: Dry - Fresh Sugar Maple - Basswood Deciduous Forest
FOD5-6 (inclusion-grass): Dry - Fresh Sugar Maple - Basswood Deciduous Forest
FOD6-3 (inclusion): Fresh - Moist Sugar Maple - Yellow Birch Deciduous Forest
FOD7-2: Fresh - Moist Ash Lowland Deciduous Forest
CGL_1: Golf Course
CUM1-1: Dry - Moist Old Field Meadow "Fringe"
CUT1-1: Sumac Cultural Thicket
CUP3-2: White Pine Coniferous Plantation
CUP3-6: White Spruce Coniferous Plantation
CVC_2: Light Industry (Pro Shop and Parking)
CVR_4: Rural Property
TAGM5: Fencerow

Wetland Ecosites:

Ephermeral Pond Inclusion
MAM2-2: Reed-canary Grass Mineral Meadow Marsh
MAS2: Mineral Shallow Marsh
SAM1-4/OAO: Pondweed Mixed Shallow Aquatic / Open Water Aquatic
SWD1-2 (Aspen): Bur Oak Mineral Deciduous Swamp
SWD2-1: Black Ash Mineral Deciduous Swamp
SWM1-1: White Spruce - Hardwood Mineral Mixed Swamp
SWMP: Stormwater Management Pond

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NORTH

Source Notes:
Base imagery (2017) provided by ESRI basemapping services.
1 - EcoVue Consulting Services (September 2022)
2 - Ontario Hydro Network (OHN)

CLIENT
Eric Challenger

PROJECT
Woodview Golf Course Subdivision

TITLE
Existing Environmental Conditions

Palmer™

REF. NO. 2005101-2-5

Figure 2

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FOD7-2: Fresh - Moist Ash Lowland Deciduous Forest

This ecosite is found in the northeast of the Study Area and comprises some of the slopes and drier bottomlands, transitioning to the wetlands to the east. While moister, upland species dominated this area. Green Ash is dominant, with taller and sparser Basswood, White Spruce (*Picea glauca*) and Bur Oak (*Quercus macrocarpa*) (**Photo B**). The subcanopy includes Green Ash with White Elm (*Ulmus americana*).

The understory included shrubby Pin Cherry (*Prunus pensylvanica*), Green Ash and Basswood. The ground cover included Balsam Fir shoots, with Red Raspberry, Philadelphia Fleabane (*Erigeron philadelphicus*). Some patches of Poison Ivy (*Toxicodendron radicans*) and invasive Dog-strangling Vine (*Vincetoxicum rossicum*) were also noted closer to the golf course.

Photo B: FOD7-2: Fresh - Moist Ash Lowland Deciduous Forest

CGL_1: Golf Course

The golf course areas are typical maintained lawns and greens, with many culturally employed species and common invasives. Open areas are almost entirely Kentucky Bluegrass (*Poa pratensis*) with Alsike Clover (*Trifolium hybridum*) and Common Dandelion (*Taraxacum officinale*). There are occasional larger trees, typically Sugar Maples. Black Locust (*Robinia pseudoacacia*) is seen on the fringes in some areas, as are Bur Oak, Eastern White Pine (*Pinus strobus*), and Pin Cherry. Poison Ivy and Smooth Brome (*Bromus inermis*) are also seen on some fringes.

CUM1-1: Dry - Moist Old Field Meadow "Fringe"

Certain fringes of the golf course are large enough and unmaintained to be considered cultural meadows instead of golf greens (**Photo C**). Smooth Brome dominates the ground cover in these areas, with Black Medick (*Medicago lupulina*) and Scentless Chamomile (*Tripleurospermum inodorum*) being frequent forb species. Typical meadow species are also present, including Common Timothy (*Phleum pratense*), Alsike Clover, and English Plantain (*Plantago lanceolata*). Common Milkweed (*Asclepias syriaca*) is occasionally present, though not in great numbers.

Eastern White Pine and White Spruce are present as occasional tree species. Shrub cover is also occasionally present, including English Hawthorn (*Crataegus monogyna*), Staghorn Sumac (*Rhus typhina*), Creeping Juniper (*Juniperus horizontalis*) and Rose (*Rosa* sp.). Invasive European Buckthorn (*Rhamnus cathartica*) is also occasionally present.

There is evidence of some cutting in places, particularly in the eastern meadow. Fill piles are also occasionally seen.

Photo C: CUM1-1: Dry - Moist Old Field Meadow "Fringe"

CUT1-1: Sumac Cultural Thicket

The area adjacent to the driving range in the northwest of the Study Area is similar to the cultural meadow community in ground cover, though trees and shrubs are also present in noted quantities. Sugar Maples, Pin Cherry and White Elm are present in about 10% cover, while the shrub layer is primarily Staghorn Sumac at 40 – 50% cover (**Photo D**).

Photo D: CUT1-1: Sumac Cultural Thicket

CUP3-2: White Pine Coniferous Plantation

There is a small area of planted Eastern White Pine in the southern portion of the Study Area (**Photo E**). The pines are planted in rows, with some Black Cherry (*Prunus nigra*). The trees have limited the development of an understory, though some Sugar Maple is present. Ground cover is also somewhat limited among pine needles; Orange Hawkweed (*Pilosella aurantiaca*) and Common Dandelion are common, showing some of the cultural/planted nature of the ecotype.

Photo E: CUP3-2: White Pine Coniferous Plantation

CUP3-6: White Spruce Coniferous Plantation

Similar to the Pine Plantation, an area of planted White Spruce is also found in the south. White Spruce are planted in rows, providing about 80% cover (**Photo F**). Needle cover is dense in this area, providing marginal ground cover. Broad-leaved Helleborine (*Epipactis helleborine*) is a non-native species that is the most present on the floor. A shrubby layer of Creeping Juniper was present at one time but was all dead at the time of surveys.

Photo F: CUP3-6: White Spruce Coniferous Plantation

CVC_2: Light Industry (Pro Shop and Parking)

The golf course includes an area that contains the pro shop, terrace and parking lot, as well as a tenanted house near the north end of the property. These areas are developed and manicured. The driving range pads are maintained but overlook one of the cultural meadow areas.

CVR_4: Rural Property

A rural property is found in the north of the Study Area, and contains a home and barn, with agricultural meadow areas. This location is beyond the development concept for the Study Area.

TAGM5: Fencerow

Certain portions of the trees landscape are limited to single rows of trees in fencerows. Species are generally Sugar Maple, with Basswood, Green Ash and Bur Oak.

4.2.1.2 Wetland and Aquatic Ecosites

Ephemeral Pond Inclusion

Within the mixed swamps that characterize much of the eastern side of Study Area are pond inclusions that stem off the open water area, likely as ephemeral spring ponding. These ponds are dense with Small Duckweed (*Lemna minor*), and fringed with Broad-leaved Cattail (*Typha latifolia*), Reed Canarygrass (*Phalaris arundinacea*) and some Spotted Water-hemlock (*Cicuta maculata*).

MAM2-2: Reed-canary Grass Mineral Meadow Marsh

The bottomlands in the southwest of the Study Area host a Mineral Meadow Marsh. This area is almost completely dominated with tall Reed Canarygrass among portions of open water. The margins include Sensitive Fern, Yellow Sedge, Inland Sedge (*Carex interior*), Spotted Jewelweed (*Impatiens capensis*) and some Broad-leaved Cattail. There is a noted presence of invasive Purple Loosestrife (*Lythrum salicaria*). Bebb's Willow (*Salix bebbiana*) provides 10 – 20% shrubby cover, while occasional Bur Oak and Black Walnut (*Juglans nigra*) are found at the margins.

MAS2: Mineral Shallow Marsh

A mineral shallow marsh is found in the northeast of the Study Area, as a continuation of the Open Water Aquatic areas, where still waters have allowed the development of emergent vegetation and marsh grasses such as Reed Canarygrass. Marshy margins of this type also held more unique species such as Slender Blue Flag (*Iris prismatica*) and Northern Water-plantain (*Alisma triviale*) among Broad-leaved Cattail and Soft-stemmed Bulrush (*Schoenoplectus tabernaemontani*).

SAM1-4/OAO: Pondweed Mixed Shallow Aquatic / Open Water Aquatic

This shallow open water is found in the eastern portion of the Study Area. It appears to largely be waters <2 m in depth, and occasionally logs and deadfall are found across its surface (**Photo G**). While there is a minor amount of Small Duckweed, more present species in the water include Horned Pondweed (*Zannichellia palustris*), Large Yellow Pond-lily (*Nuphar advena*), and Canada Waterweed (*Elodea canadensis*). Beavers have dammed the eastern end, which is dominated by marsh species at its fringes. These include dominant Broad-leaved Cattail, with Reed Canarygrass, Fowl Bluegrass (*Poa palustris*), and Spotted Jewelweed.

The overall open waters are fringed with White Spruce with Eastern White Cedar and Northern Red Oak. The peninsula in the middle of the waters include Eastern White Pine and White Spruce, and occasional Tamarack (*Larix laricina*) is also found nearby. The pond dam does outlet to the south as indicated on **Figure 2**.

Photo G: SAM1-4/OAO: Pondweed Mixed Shallow Aquatic / Open Water Aquatic

SWD1-2 (Aspen): Bur Oak Mineral Deciduous Swamp

This Trembling Aspen and Bur Oak dominated swamp is found adjacent to the golf course in the south (**Figure 2, Photo H**). The golf course quickly slopes to this community, and small open water ephemeral ponds comprise much of the surface. Some downed logs and snags are found throughout.

The canopy of aspen and oak also includes some White Elm at about 50% cover. The subcanopy is Sugar Maple and Black Ash (*Fraxinus nigra*). Understory shrub-level species include Alternate-leaved Dogwood and Silver Maple (Acer saccharinum). Amongst the ponds, the ground cover was dense and diverse. Notable species included Graceful Sedge (dominant), American Hog-peanut (*Amphicarpaea bracteata*), Dwarf Raspberry (*Rubus pubescens*), Cyperus-like Sedge (*Carex pseudocyperus*), Larger Straw Sedge (*Carex normalis*). Saplings of Pignut Hickory (*Carya glabra*) were also observed in the ground cover.

The north polygon of this type (adjacent to FOD5-6 grass inclusion) is transitional from that upland inclusion and contains some White Spruce and Black Cherry in the canopy.

Photo H: SWD1-2 (Aspen): Bur Oak Mineral Deciduous Swamp

SWD2-1: Black Ash Mineral Deciduous Swamp

Dense (75% cover) Black Ash with traces of White Spruce make up the canopy of this ecotype. However, most of these 20 m+ tall trees are either dead or dying, although most remain standing and snags are densely packed. The subcanopy is also Black Ash with some White Elm. The tree layers rise out of a very consistent open waters at the base, where ground cover is limited to hummocks. Ground cover is largely mosses, though Alternate-leaved Dogwood and Skunk Currant (*Ribes glandulosum*) are frequent understory species. Fox Sedge (*Carex vulpinoidea*), American Water-horehound (*Lycopus americanus*) and Sensitive Fern are also relatively common in the ground cover.

Photo I: SWD2-1: Black Ash Mineral Deciduous Swamp

SWM1-1: White Spruce - Hardwood Mineral Mixed Swamp

Surrounding the Pondweed Mixed Shallow Aquatic / Open Water Aquatic areas is a White Spruce dominated swamp with White Elm, Balsam Fir, White Birch, and Bur Oak. Higher lands are found above the pond inclusions (above) (**Photo J**). Ground cover on these areas is predominantly Sensitive Fern and Inland Sedge, mixed with upland species such as Wild Lily-of-the-valley (*Maianthemum canadense*) and Wild Sarsaparilla (*Aralia nudicaulis*).

Photo J: SWM1-1: White Spruce - Hardwood Mineral Mixed Swamp

SWMP: Stormwater Management Pond

A created stormwater management pond is part of the golf course infrastructure. It is roughly ovoid with steep sides. The open waters are fringed with Broad-leaved Cattail and Common Woolly Bulrush (*Scirpus cyperinus*). Above that fringe are wet willow species, including Bebb's Willow, Pussy Willow (*Salix discolor*) and Coyote Willow (*Salix exigua*).

Photo K: SWMP: Stormwater Management Pond

4.2.2 Flora

From spring and summer surveys, 122 species of vascular plants were recorded within the Subject Property, including 97 (80%) native species and 25 (20%) which are non-native to Ontario (**Appendix A**). This percentage demonstrates the naturalness of the recorded ecotypes, as most of the non-native species are limited to the golf course areas, with only minor invasion. On the golf course, the species and number of non-native species is typical of developed areas in Southern Ontario (Morton & Venn, 1984). Similarly, Oldham et al. (1995) indicate that in southern Ontario plant communities, non-native flora presence averages between 20 and 30%.

Five Butternut trees, a SAR listed as Endangered under the ESA, were observed on the Study Area (**Figure 2**). No other listed SAR or rare vegetation species were observed (Ministry of Natural Resources and Forestry, 2022; Oldham & Brinker, 2009). Three species listed as "S3" by NHIC were observed, including Black Ash, Pignut Hickory and Large Yellow Pond-lily. Pignut Hickory volunteers were found in the SWD1-2 swamp at the south of the Study Area, and Black Ash dominated the SWD2-1 swamp east of that, though much was dead at the time of survey. The Large Yellow Pond-lily was observed floating in the Pondweed Mixed Shallow Aquatic / Open Water Aquatic area in the east of the Study Area.

4.3 Breeding Amphibians

The surveys conducted targeted potentially suitable wetland areas on the Subject Property at five locations (**Figure 2**). Four species of amphibians were recorded during the surveys: Green Frog (*Lithobates*

clamitans), Spring Peeper (*Pseudacris crucifer*), Grey Treefrog (*Hyla versicolor*), and American Bullfrog (*Lithobates catesbeianus*). A summary of the surveys is provided in **Table 2**. Note that a fifth species, Mink Frog (*Lithobates septentrionalis*), was observed incidentally (Section 4.6).

Table 2. Breeding Amphibians

Breeding Amphibian Monitoring Station	May 24, 2022	June 28, 2022
Weather Conditions:	15°C, 10% cloud cover, Beaufort Wind Scale 1	18°C, 0% cloud cover, Beaufort Wind Scale 2
Station 1	Green Frog: Code 1-2 Spring Peeper: Code 2-4 (outside of Station range)	No calls heard.
Station 2	Spring Peeper: Code 2-6 Grey Treefrog: Code 2-4	No calls heard.
Station 3	Grey Treefrog: Code 1-1 (outside of Station range)	Bullfrog: Code 1-1
Station 4	Spring Peeper: Code 2-3 Grey Treefrog: Code 1-1	No calls heard.
Station 5	Spring Peeper: code 2-12 Grey Treefrog: Code 2-4 Green Frog: Code 2-3	No calls heard.

***Note:**
The calling codes are designated according to the Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (Bird Studies Canada, 2009).
They are as follows:
1 – Individuals of one species can be counted, calls are not overlapping; second number denotes number of individuals.
2 – Calls of one species are overlapping; second number denotes estimated number of individuals.
3 – Full chorus of one species, calls continuous and overlapping, individuals not distinguishable.

4.4 Breeding Birds

A total of 46 bird species were documented on the property, as summarized in **Appendix B**. Bird species locations were categorized across three locations: Location 1 (Golf Course), Location 2 (Forest/Wetland southwest of development), Location 3 (areas east of Proposed Development). As expected, most species observed were edge habitat species (for example Song Sparrow [*Melospiza melodia*] and Cedar Waxwing [*Bombycilla cedrorum]*) and forest associated species (for example Red-eyed Vireo [*Vireo olivaceus*], woodpeckers, thrush and warbler species). Most of the birds recorded on the Study Area are considered common, widespread and abundant in central Ontario.

Area-sensitive bird species were recorded from the Study Area and while not rare, such species are associated with higher quality habitats and generally require large areas of continuous habitat for breeding and foraging or are more productive in larger areas of habitat. The specific habitat requirements vary by species. In general, the most area-sensitive species were recorded in Location 3 (13 individuals), and the least were recorded in Location 1 (2 individuals). Six individuals were recorded in Location 2. Of the species observed, nine were area-sensitive species as listed below:

- Black-and-white Warbler (*Mniotilta varia*) – 1 in Location 2, 3 in Location 3
- Black-throated Green Warbler (*Setophaga virens*) – 1, Location 3
- Blue-headed Vireo (*Vireo solitarius*) – 1, Location 3
- Magnolia Warbler (*Setophaga magnolia*) – 1, Location 2
- Ovenbird (*Seiurus aurocapillus*) – 1 in Location 2, 4 in Location 3
- Savannah Sparrow (*Passerculus sandwichensis*) – 2, Location 1
- Scarlet Tanager (*Piranga olivacea*) – 1, Location 3
- Veery (*Catharus fuscescens*) – 1, Location 2 and 3
- Yellow-bellied Sapsucker (*Sphyrapicus varius*) – 2 in Location 2 and 3

Three SAR were recorded on the property: Eastern Wood-Pewee (*Contopus virens*) (Special Concern), Barn Swallow (*Hirundo rustica*) (Threatened), and Golden-winged Warbler (*Vermivora chrysoptera*) (Special Concern). One Eastern Wood-pewee was recorded in Location 2 (southwest FOD5-6) during the first survey, and another was recorded in Location 3 (SWD1-2) during the second survey. Multiple Barn Swallow were observed foraging through Location 1 (open golf course areas), and three Barn Swallow nests were observed within the barn in the CVR_4 area to the north of the golf course lands. Eastern Wood-pewee and Barn Swallow are relatively widespread and common species. One Golden-winged Warbler was observed at the edge of Location 3 (southern edge of FOD7-2 and golf course lands) during the second survey. This species is discussed further in Section 5.5.8

4.5 Turtle Surveys

During surveys, it was determined that only the SAM1-4/OAO open waters had a high potential to observe turtle activity (**Figure 2**) which may be present. While potential may exist within the SWD2-1 in the southeast of the Study Area, the dense Black Ash severely limited basking opportunities and the potential for observation. The Stormwater Management Pond holds open waters, but contains no basking structures over water, where ease of escape is possible. The SWMP is also a man-made feature within a high traffic area, limiting its attractiveness for turtles.

The open waters of the SAM1-4/OAO were determined to host Midland Painted Turtles (*Chrysemys picta marginata*) This was confirmed by the red coloration in the underbelly and lack of spots on shell. Observing only a limited portion of the open waters, the following observations were made at the established observation station:

- June 10 – 1 Midland Painted Turtle
- June 21 – 2 Midland Painted Turtles
- June 30 – 1 Midland Painted Turtle
- July 27 – 1 Midland Painted Turtle, and 4 more further along the waters.

4.6 Incidental Wildlife Observations

Wildlife habitat opportunities are generally limited within the golf course lands on the Subject Property; however, the forest and swamp communities present would provide many habitat opportunities. While expected wildlife include common, generalist species such as Raccoon (*Procyon lotor*), Skunk (*Mephitis mephitis*), Grey Squirrel (*Sciurus carolinensis*) White-tailed Deer (*Odocoileus virginianus*), other opportunities are present, especially in the woodlands and wetlands at the eastern side of the Study Area. Incidental observations during surveys included:

General Study Area observations included:

- Small amounts of Monarch (*Danaus plexippus*) butterflies
- Red Squirrel (*Sciurus vulgaris*)
- Killdeer (*Charadrius vociferus*) displaying a “wounded” defensive behaviour
- Bat observations and Coyote calls during amphibian surveys.

Several incidental frog calls were heard at the SWMP beyond formal surveys including:

- Green Frog
- American Bullfrog
- Mink Frog (*Lithobates septentrionalis*)

The SAM1-4/OAO was particularly diverse and in addition to turtles, incidental observations included:

- Red-winged Black Birds in cattails/reeds
- Green Frogs, Mink Frogs, Gray Tree Frogs, and American Bullfrogs heard
- A Beaver investigated the surveyor (with tail slap)
- Observation of White-tailed Deer on June 21
- Deer tracks on path from the golf course
- Potential sighting of a Green Heron on July 27
- Many minnow-sized fish in the open waters.

5. Significant Natural Heritage Features

For the Study Area, the on-site potential for Significant Wetlands, Significant Woodlands, valleylands and fish habitat, Habitat for *Endangered* and *Threatened* species (Species at Risk), and Significant Wildlife Habitat (SWH), are evaluated in relation to the project in the following sections. The Subject Property does not support or have the potential to support other NHF types (e.g., ANSI, coastal wetlands) and these are not assessed in this report.

5.1 Significant Wetland

The wetlands on and surrounding the Study Area are designated by the MNRF as Unevaluated Wetlands (**Map A**). While the wetlands to the southwest of the Study Area are relatively small and isolated from other natural heritage features, the wetlands to the east are extensive and represent significant wildlife habitat potential (Section 5.5) and a diversity of flora and natural features. As such, these wetlands are treated as Significant for the purposes of this report.

5.2 Significant Woodland

The County of Peterborough notes significant woodlands within Ecoregion 6E as those 50 ha or greater. As the Study Area overlaps Ecoregions 5E and 6E, there is the potential that the woodlands within the Study Area to be considered Significant.

Yet the woodlands within and to the west of the Study Area (within Ecoregion 6E) are not >50 ha (**Figure 1**), being separated from greater woodlands by agricultural clearings and the Settlement Area of Woodview. To the east of the Study Area, the woodlands within and beyond the Subject Property are >50 ha; however, as they are in Ecoregion 5E, they are not defined as a Significant feature under the PPS, though they would match MNRF definitions of Significant Woodlands (Ontario Ministry of Natural Resources, 2010).

While the above would mark the woodlands as non-Significant, due to the quality and adjacency of these woodlands to the Study Area, it is advisable to also consider a “no negative impact test” to ensure that development does not produce an appreciable impact on the features and functions of the woodlands (Section 8.1.1).

5.3 Significant Valleyland and Fish Habitat

Significant Valleylands south of the Canadian Shield and Fish Habitat are defined NHF under the PPS and the Peterborough County Official Plan. The areas to the southwest and east of the Study Area are defined by an apparent Top of Bank (**Figure 2**). These valleylands are considered significant for purposes of EIS. Both these valleys lead to wetlands that include areas of open waters that may and do provide opportunities for fish habitat. Therefore, the valleylands on the Study Area are also considered to hold Fish Habitat as per the PPS and County OP.

Conversely, there is a tableland ridgeline midway in the Study Area. However, this area is tablelands at both the top and base of the slope; there is no associated water features or opposite slope and represents solely changes in topography. Therefore, it would not be considered a valleyland.

5.4 Habitat of Endangered and Threatened Species

The Subject Property was screened for potential SAR habitat opportunities using background review and assessment of the Study Area. Habitat opportunities for SAR on the Site were assessed by comparing habitat preferences of species deemed to have potential to occur against current site conditions (**Appendix C**).

The background review revealed records of Cerulean Warbler (*Setophaga cerulea*) and Blanding's Turtle (*Emydoidea blandingii*) within and adjacent to the NHIC grid square containing the Study Area (Ministry of Natural Resources and Forestry, 2022). In addition, Barn Swallow was included in the assessment, as an individual was observed during surveys (Section 4.4).

Other bird SAR with records from other sources were also identified and considered; however, were not evaluated due to the lack of available habitat and/or observations during breeding bird surveys (Bird Studies Canada, 2020; Ontario Nature, 2020).

Professional experience shows that treed sites should also be reviewed for their potential to contain:

- SAR tree species (e.g., Butternut, American Chestnut, both Endangered)
- SAR bat species, including:
  - Eastern Small-footed Myotis (*Myotis leibii*) – Endangered
  - Little Brown Myotis (*Myotis lucifugus*) – Endangered
  - Tri-colored Bat (*Perimyotis subflavus*) – Endangered

In addition, NHIC records showed potential for species ranked as Special Concern under the ESA. Special Concern species are not afforded protection under the ESA; however, their habitats are considered under Significant Wildlife Habitat and are discussed further in Section 5.5.

5.4.1 Barn Swallow

Multiple Barn Swallow were observed foraging through the open golf course areas, and three Barn Swallow nests were observed within the barn in the CVR_4 area to the north of the golf course lands (**Figure 2**). Nesting opportunities appear to be contained to the barn, and foraging may occur over a wider area, including the fields adjacent to the barn in the CVR_4 area and also beyond the Study Area.

5.4.2 Blanding's Turtle

While Turtle basking surveys were completed in the high potential area of the Study Area, Blanding's Turtle was not observed. Midland Painted Turtles were observed in the SAM1-4/OAO habitat (**Figure 2**). The surveys completed do not definitively exclude the potential for Blanding's Turtle; however, the habitat protections outlined for Midland Painted Turtles will serve to protect Blanding's Turtle and other species (Section 7).

5.4.3 Butternut

In Ontario, Butternut usually grows in sunny openings and near edges of deciduous forests (Ontario Ministry of Natural Resources and Forestry, 2014). Butternut trees suffer from a highly transmissible fungal disease

called butternut canker, which is the cause of their decline and SAR status as Endangered. The habitat for butternut includes a minimum radius of 25 m from the base of the stem of the tree, irrespective of the tree's size (Ontario Ministry of Natural Resources and Forestry, 2014).

Five (5) Butternut were observed on the Study Area during field surveys (**Figure 2**). The results of the Butternut Health Assessment show that all five trees are considered Category 1 (Non-retainable) trees. Under the ESA, a Category 1 tree is considered too diseased to protect, while Category 2 and 3 trees have protections and/or compensation requirements (Government of Ontario, 2007). Category 1 trees (Non-retainable) can be injured or removed following MECP registry to provide notification of a planned activity.

5.4.4 Bats

Several of Ontario's Species at Risk bats are known to occur in Peterborough County, with most being widespread across Ontario. Maternity roosting for these species occurs in forested communities, preferring mature deciduous and mixed forests with cavity trees (those with cracks, cavities or openings suitable for roosting) >25 cm diameter at breast height (DBH). The FOD6-3 (inclusion) to the southwest and the treed areas to the east of the Study Area are considered to present the most suitable habitats due to the larger DBH trees present and the proximity to water for feeding. Without targeted surveys, the forested areas of the Study Area are assumed to hold potential habitat for SAR bats.

General avoidance and mitigation for SAR trees and bat habitats is discussed in **Section 7**.

5.5 Significant Wildlife Habitat

Significant Wildlife Habitat (SWH) can be difficult to appropriately determine at the site-specific level, as the assessment must incorporate information from a wide geographic area and consider other factors such as regional resource patterns and landscape effects. To help with site level assessments, the MNRF has developed the *Significant Wildlife Habitat Criteria Schedules* for Ecoregions 5E and 6E (Ontario Ministry of Natural Resources and Forestry, 2015; Ontario Ministry of Natural Resources and Forestry, 2015). Planning authorities have the responsibility to identify Significant Wildlife Habitat. The detailed identification and designation of SWH has not been completed in Peterborough County.

SWH is defined by the MNRF in the Significant Wildlife Habitat Technical Guide (Ontario Ministry of Natural Resources, 2000) and Natural Heritage Reference Manual (Ontario Ministry of Natural Resources, 2010) and includes the following categories:

- Habitats of Seasonal Concentrations of Animals;
- Rare Vegetation Communities or Specialized Habitat for Wildlife;
- Habitat of Species of Conservation Concern; and,
- Animal Movement Corridors.

Criteria for the identification of these features are also provided in the *Significant Wildlife Habitat Criteria Schedules*. For this project, the criteria for both Ecoregion 5E and Ecoregion 6E were reviewed due to overlap. In particular, the eastern portion of the Study Area presents opportunities for 5E criteria within the larger woodland/wetland system. Along with field observations, these criteria were used to provide an assessment and screening for wildlife habitat within the Study Area for potential SWH within and

immediately adjacent to the property, as detailed in **Appendix D**. The following summary discusses the SWH components and Potential SWH that were identified as having the potential to occur within the Study Area.

5.5.1 Bat Maternity Colonies (Ecoregions 5E and 6E)

Similar to potential SAR bat habitat (Section 5.4) the on-site woodlands have the potential to hold Bat Maternity Colony SWH type (for non-SAR species). This SWH type is a mature deciduous forest with cavity trees >25 cm DBH and proximity to water for feeding. Without targeted surveys, the forest types are assumed to be potential Bat Maternity Colony SWH type.

5.5.2 Turtle Wintering Areas (Ecoregions 5E and 6E)

At least five Midland Painted Turtles were observed in the SAM1-4/OAO in the eastern portion of the Study Area in appropriate habitat including basking opportunities. The open waters appear to have soft mud substrates for overwintering, and there are logs and features that present congregation opportunities for turtles. With five Midland Painted Turtles observed, the SAM1-4/OAO can be considered a confirmed Turtle Wintering Area SWH type.

5.5.3 Turtle Nesting Areas (Ecoregions 5E and 6E)

Turtle nesting requires sands and gravels to allow for digging to create nests. While no specific sites were observed, there are upland areas to the south and east sides of the SAM1-4/OAO in the eastern portion of the Study Area. With five Midland Painted Turtles observed, nesting opportunities are assumed to be present in adjacent areas. Thus, per the criteria a 100 m radius has been applied to the SAM1-4/OAO to define potential areas for this type on adjacent lands (**Figure 3**).

5.5.4 Aquatic Feeding Habitat (Ecoregion 5E)

This SWH type is specific to Ecoregion 5E and looks to identify high value areas for Moose and White-tailed Deer. White-tailed Deer tracks and scat were incidentally observed on paths adjacent to the SAM1-4/OAO in the eastern portion of the Study Area. The open waters do contain Large Yellow Pond-lily, and the adjacent wetlands contain conifer species for shade. While not an area mapped by the MNRF (not Crown Land), it meets criteria descriptions and is considered as Potential Aquatic Feeding Habitat. A 120 m radius has been applied to the SAM1-4/OAO per the *Guideline* description (**Figure 3**).

5.5.5 Denning Sites for Mink, Otter, Marten, Fisher, and Eastern Wolf (Ecoregion 5E)

These species were not observed on site; however, conditions at the SAM1-4/OAO match habitat descriptions in the Guideline (Ontario Ministry of Natural Resources and Forestry, 2015). The area hosts fish populations and the shorelines include shrubby species and downed woody debris near coniferous/mixedwood forests. Therefore, similar to Turtle Nesting Areas, this area is assumed to hold potential Denning Site SWH for at least Mink and Otter, and a 100 m radius has been applied (**Figure 3**).

5.5.6 Amphibian Breeding Habitat (Wetlands) (Ecoregions 5E and 6E)

While other criteria species were not observed at criteria levels, Bullfrog was observed in the SAM1-4/OAO wetland. The habitat is ideal, including presence of permanent water, shrubs and logs, and abundant

emergent vegetation. The wetland and shoreline that define this type are contained within the 100 m radius that has been applied for other SWH types. While Bullfrogs were also heard incidentally at the SWMP pond, this feature is anthropogenic, and does not present the ideal habitat features, and is not considered to be SWH for Bullfrog.

5.5.7 Woodland Area-Sensitive Bird Breeding Habitat (Ecoregion 6E)

Nine area-sensitive bird species were observed (Section 4.4), eight being within the woodlands to the southwest (Location 2) and/or east (Location 3) of the Study Area. Only one species was observed in the golf course itself. Although a region-wide study would be necessary to definitively determine which forests should be considered SWH in the region, it is possible that the forests east of the current golf course might be considered SWH, as forests there extend >200 m from the woodland edge per the criteria. Thus, that area has been considered potential SWH.

5.5.8 Special Concern and Rare Wildlife Species (Ecoregions 5E and 6E)

Special Concern species within the NHIC grid squares evaluated for the Study Area include:

- Eastern Wood-Pewee
- Golden-winged Warbler
- Eastern Musk Turtle (*Sternotherus odoratus*)
- Snapping Turtle (*Chelydra serpentina*)
- Common Five-lined Skink (Southern Shield Population) (*Plestiodon fasciatus*)
- Western Chorus Frog (*Pseudacris triseriata*)

Eastern Wood-Pewee was observed in the eastern portion of the Study Area (Section 4.4). While a Special Concern species, since Eastern Wood-pewee is relatively common in southern Ontario and is found in a wide variety of forest types and sizes, confirmation of a single breeding pair is not considered to identify the Subject Property as SWH for this species.

Golden-winged Warbler is species of '*successional shrub habitats surrounded by forest*' (Cadman, Sutherland, Beck, Lepage, & Couturier, 2007) and '*open areas with abundant herbaceous vegetation, large clumps of bushes, and relatively few trees, marked preference for dense clumps of bushes and shrubs on the edge of woodlands*' (Gauthier & Aubry, 1996). Thus, it was observed in suitable habitat at the intersection of the golf course and the forest in an area of meadow and scattered trees and shrubs. As this species is uncommon, the presence of one individual is considered to constitute SWH for Special Concern species. It's location and presumed territory has been shown on **Photo L**.

Photo L: Estimated Golden-winged Warbler territory

Eastern Musk Turtle and Snapping Turtle were not observed during field surveys; however, potential habitats for these species are discussed in Sections 5.5.2 and 5.5.3.

No species-specific surveys were completed for Common Five-lined Skink. As this EIS cannot confirm the presence or absence of the Skink, due to the developed golf course, habitat for this species is unlikely to be present in the Study Area.

In addition, Monarch butterflies were observed in the Study Area. However, the criteria for Monarch SWH are not met; the area is much more distant than 5 km from Lake Ontario and neither Monarch nor Common Milkweed (their preferred nectar species) were observed in quantities to qualify as SWH. The proposed development would not limit available habitat in the general area.

In terms of rare flora, no species protected by the ESA were observed (Section 4.2.2). However, three species listed as “S3” by the NHIC were observed, including Black Ash, Pignut Hickory and Large Yellow Pond-lily. All these species were observed in woodlands/wetlands on east side of Study Area, and habitat avoidance and protections are outlined in Section 7.

5.5.9 Amphibian Movement Corridors (Ecoregion 6E)

As the SAM1-4/OAO area is considered Amphibian Breeding Habitat (Wetlands) SWH type, movement corridors must also be considered. Corridors must consist of native vegetation, with several layers of vegetation (Ontario Ministry of Natural Resources and Forestry, 2015). Corridors should have at least 15 m of vegetation on both sides of waterway or be up to 200 m wide of woodland habitat and with gaps <20 m. **Figure 3** demonstrates that the waterways associated with the SAM1-4/OAO area have a buffer of 30 m, and that woodland habitats border that. Therefore, Amphibian Movement Corridors are likely present within the woodlands/wetlands on the east side of the Study Area.

5.5.10 Significant Wildlife Habitat Summary

The above SWH types are summarized in **Table 3**. Certain habitat radii per the criteria are outlined on **Figure 3**. This analysis shows that the SAM1-4/OAO wetland area and appropriate radii and the forests/wetlands to the edges of the Study Area contain most SWH types. The Golden-winged warbler habitat is a territory between the eastern woodlands and the stormwater management pond (**Figure 3**).

Table 3: Significant Wildlife Habitat Summary

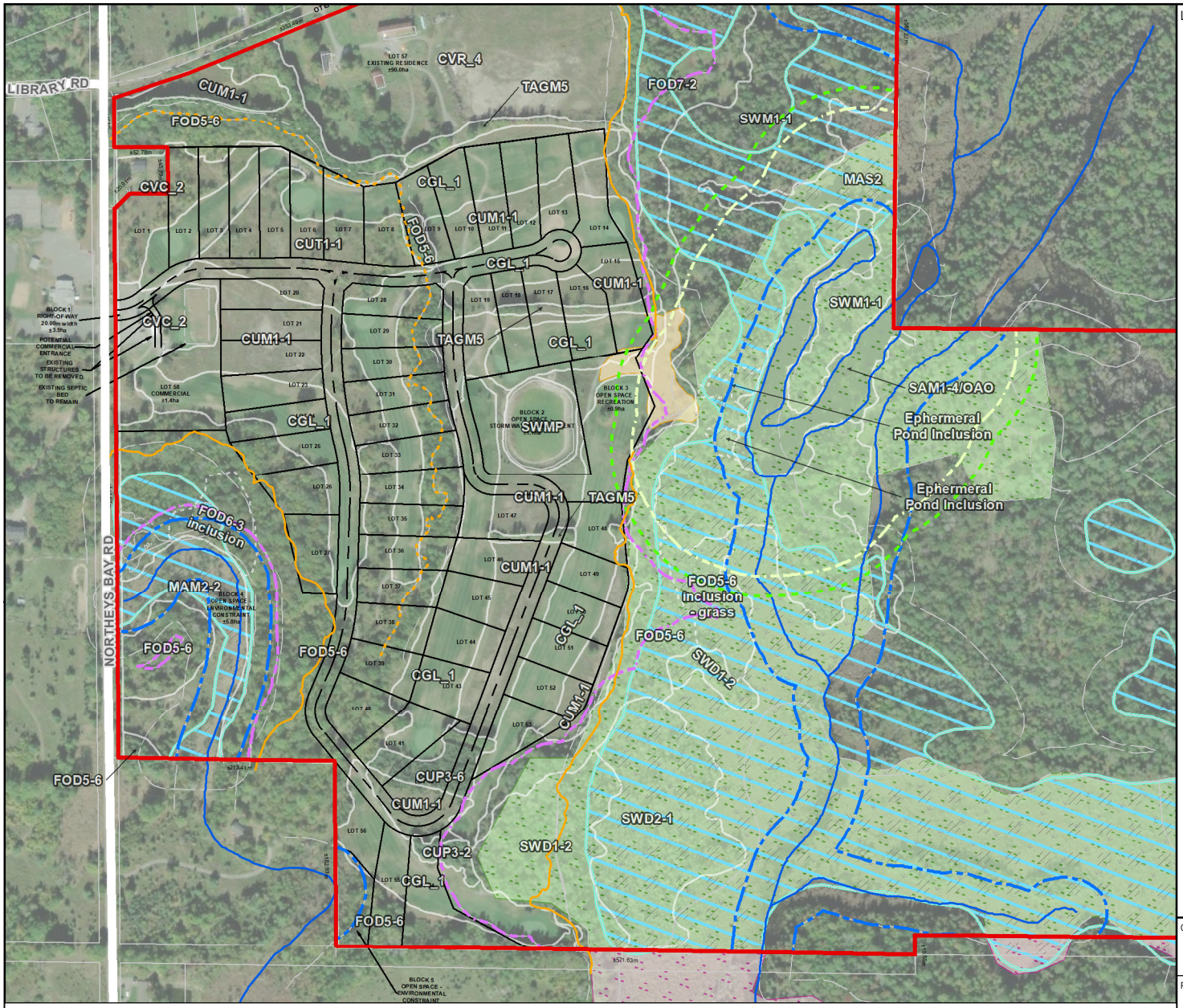
SWH Type	Status	Ecoregion	Location	Defined Habitat
Bat Maternity Colonies	Potential	5E, 6E	Forests to east and southwest side of Study Area	Woodlands with deciduous trees >25 cm DBH.
Turtle Wintering Areas	Confirmed (Midland Painted Turtle)	5E, 6E	SAM1-4/OAO	Open waters of this ecosite
Turtle Nesting Areas	Potential	5E, 6E	SAM1-4/OAO	100 m radius around ecosite, per criteria
Aquatic Feeding Habitat	Potential	5E	SAM1-4/OAO	120 m radius around ecosite, per criteria
Denning Sites	Potential	5E	SAM1-4/OAO	100 m radius around ecosite, per criteria
Amphibian Breeding Habitat (Wetlands)	Confirmed (Bullfrog)	5E	SAM1-4/OAO	100 m radius around ecosite, per criteria
Woodland Area-Sensitive Bird Breeding Habitat	Potential	6E	Forests to east side of Study Area	Forests with interiors >200 m from forest edge
Special Concern and Rare Wildlife Species	Confirmed (Golden-winged Warbler)	5E, 6E	Habitat mapped on **Photo L** and **Figure 3**	Habitat/territory mapped on **Figure 3**
	Potential (Turtles and Skink)	5E, 6E	SAM1-4/OAO wetland area	100 m radius around ecosite, per criteria
	Potential (Uncommon Flora)	5E, 6E	Forests / wetlands to east side of Study Area	Forests / wetlands to east side of Study Area
Amphibian Movement Corridors	Potential	6E	Watercourse associated with SAM1-4/OAO	30 m buffer on watercourses (**Figure 3**)

6. Proposed Development

The proposed development is a subdivision consisting of 56 residential lots and one commercial lot (**Figure 3**). Also included are proposed roadways, an open space recreational area, and a stormwater management pond. All proposed development will occur on private water and septic services.

The proposed lots are generally between 3,000 and 4,000 square metres, which will provide sufficient space for a single detached dwelling with private individual septic systems and wells.

The overall shape of the proposed development is formed by the landscape and in consideration for the natural features of the area. The shape and prescribed setbacks of natural features to the east side of the Study Area have informed the limit of the development on that side. Similarly, the natural features in the southwest have provided a natural boundary for the extent of the proposed development within that area. The necessity for a stormwater management pond for the development has taken advantage of that existing pond on the golf course, limiting the amount of excavation required. The Open Space recreational block has been placed adjacent to the natural area and between it and the stormwater management pond. This has been purposefully done, to increase contiguous green spaces within and adjacent to the proposed development. Similarly, the lot configuration places the rears of lots adjacent to natural features, with the intention that lot green spaces will separate built features on the lots from the natural system to the degree feasible.



LEGEND

- Watercourse [1]
- Site Plan [1]
- Tableland Ridgeline [1]
- Top of Bank [1]
- 100 m Significant Wildlife Habitat Setback
- 120 m Significant Wildlife Habitat Setback
- Wetland Setback (30 m)
- Water Setback (30 m) [1]
- Golden-winged Warbler Habitat
- Existing Environmental Constraint Area [1] - new Peterborough County OP
- Existing Environmental Constraint Area [2]
- Existing Unevaluated Wetland [3]
- ELC Community
- ELC Inclusion
- Subject Property

1 - EcoVue Consulting Services (September 2022)
2 - Schedule A3, County of Peterborough Official Plan (N. Kawartha Land Use)
3 - MNRF

0 25 50 100 150 200 250
METRE SCALE

North American Datum 1983
Universal Transverse Mercator Projection Zone 17

Scale: 1:6,000
Page Size: Letter (8.5 x 11 inches)

Drawn: SM
Checked: AA
Date: Dec 20, 2022

NORTH

Source Notes:
Base imagery (2017) provided by ESRI basemapping services.

ELC LEGEND

Terrestrial Ecosites
FOD5-6: Dry - Fresh Sugar Maple - Basswood Deciduous Forest
FOD5-6 (inclusion-grass): Dry - Fresh Sugar Maple - Basswood Deciduous Forest
FOD6-3 (inclusion): Fresh - Moist Sugar Maple - Yellow Birch Deciduous Forest
FOD7-2: Fresh - Moist Ash Lowland Deciduous Forest
CGL_1: Golf Course
CUM1-1: Dry - Moist Old Field Meadow "Fringe"
CUT1-1: Sumac Cultural Thicket
CUP3-2: White Pine Coniferous Plantation
CUP3-6: White Spruce Coniferous Plantation
CVC_2: Light Industry (Pro Shop and Parking)
CVR_4: Rural Property
TAGM5: Fencerow

Wetland Ecosites:
Ephermeral Pond Inclusion
MAM2-2: Reed-canary Grass Mineral Meadow Marsh
MAS2: Mineral Shallow Marsh
SAM1-4/OAO: Pondweed Mixed Shallow Aquatic / Open Water Aquatic
SWD1-2 (Aspen): Bur Oak Mineral Deciduous Swamp
SWD2-1: Black Ash Mineral Deciduous Swamp
SWM1-1: White Spruce - Hardwood Mineral Mixed Swamp
SWMP: Stormwater Management Pond

CLIENT
Eric Challenger

PROJECT
Woodview Golf Course Subdivision

TITLE
Proposed Development

Palmer™

REF. NO. 2005101-3-5

Figure 3

Document Path: G:\Shared drives\Projects 2022\22046 - Eric Challenger\2204601 - Woodview Golf Course Subdivision\GIS\1_Workspace\Task 2 - EIS Figure Set\2204601-3-2-Proposed Development.mxd

7. Impact Assessment and Mitigation

Given that the proposed development will be situated primarily within the golf course and its cultural vegetation communities of the existing on-site tablelands, development will not result in significant impacts to natural heritage features (see **Figure 2** and **Figure 3**). The majority of the development lands comprise the actively managed golf course, including greens, meadow, thicket and plantation communities that support mainly common native and non-native species, indicative of culturally influenced communities.

The primary concerns from the proposed development are associated with the potential for direct and indirect or adjacent impacts to the fringe woodlands and wetlands, associated watercourses, and habitat features located within. As described (Section 5), these features support presumed Significant Wetlands, Woodlands, Significant Valleyland and Fish Habitat, SAR and potential SAR, and Confirmed and Candidate SWH features. Direct impacts, such as vegetation clearing, encroachment on SWH types and SAR habitat, and wildlife encounters have been mitigated by the implementation of required setbacks and additional construction and human-activity recommendations. Indirect impacts (e.g., sediment movement from construction-related earthworks) can be mitigated appropriately through implementation of the measures described below.

7.1 Significant Wetland

The wetlands adjacent to the proposed development are detailed as Unevaluated Wetlands by the MNRF, and not currently considered Provincially Significant Wetland (PSW). However, given their size, breadth and wildlife habitat opportunities, the Study Area wetlands have been treated as PSW for the purposes of this report. Through data collection and analysis for this EIS, the extents of these wetlands have been refined and extended (**Figure 2**). In line with typical setbacks to PSW in other municipalities and conservation authority regulated areas, a 30 m setback has been applied to all wetlands and the proposed development designed to avoid these areas.

As such, the wetlands including water input and output features are avoided and setback from the proposed development.

Being adjacent to the proposed development, there is the potential for increased human activity within the adjacent natural areas (e.g., hiking, hunting, dumping). To reduce the potential impacts this might have on the wetlands, tall (1.5 m+) rear lot fences without gates are recommended to be required as part of lot development. At the recreation area limits, fences and signs should be installed to discourage entry into the natural system. Dumping within the area should be prohibited within subdivision by-laws, and waste collection or disposal options made clear to lot owners.

7.2 Woodlands

A limited amount of tree clearing will be required to accommodate the proposed development. This includes the linear arms between the golf course greens. These portions are linear and have experienced active use and human disturbance over time due to golf course activity. This makes these areas similar to the fencerows in the Study Area and are not significant portions of the overall woodland area.

Some clearing within the southwest forested area may also be required, and the eastern limits of the proposed development are adjacent to the forested areas to the east. In these areas, it is recommended that building envelopes (that would contain the limits of built structures and hard surfaces) require a minimum of 10 m of clearance to the Top of Bank.

Lot owners should also be encouraged to retain natural areas with as many trees on their properties as feasible.

Considering the vast tracts of forest in the general area, the limited amount of clearing that may be required for development would not appreciably affect the form or functions of the woodlands in the Study Area (**Figure 1**).

7.3 Significant Valleyland and Fish Habitat

The Top of Banks have been surveyed for the Proposed Development, and the conceptual design has been created to avoid these features that represent valleylands (**Figure 3**), thereby avoiding and reducing potential effects to the Study Area valleylands. Woodlands and wetlands will be retained in the established setbacks to open water areas, and the undisturbed ground and ground cover vegetation will serve to attenuate potential impacts from the proposed development on fish habitat and water quality.

Similar to woodlands, it is recommended that building envelopes (that which would contain built structures and hard surfaces) require a minimum of 10 m of clearance to the Top of Bank to preserve and buffer valleyland and fish habitat Natural Heritage Features.

7.3.1 Erosion and Sediment Control

In order to minimize impacts to the wetland communities and watercourses within the valleylands, an Erosion and Sediment Control (ESC) Plan should be required for construction phases of the development. This plan should incorporate standard measures such as Installation of erosion and sediment control measures around the development footprint in order to minimize off-site sediment transport. These may include the following:

- Installation of temporary silt fence, mud matt & rock check dams following the *Erosion and Sediment Control Guidelines for Urban Construction* (Greater Golden Horseshoe Conservation Authorities, 2006).
- These control measures should be placed along the building envelopes, and at minimum at the dripline of the forested areas to be retained.
- All created exposed surfaces should be restored as soon as possible following construction, including appropriate landscaping, as applicable.
- The use of native seeds and materials in landscaping is to be encouraged.

7.3.2 Septic Systems

At the western and eastern fringes of the proposed development, the lands slope to hydrological systems. As such, septic locations should follow the intent of the County of Peterborough Official Plan, which requires

a 30 m buffer from the high watermark. Septic fields at the fringes of the development should require a minimum 30 m from adjacent hydrologic features, including watercourses, wetlands and open waters.

7.4 Species at Risk

Through Ecological Land Classification, wildlife surveys and field investigations for potentially suitable habitat and related features, a habitat screening and assessment was completed for SAR as summarized in **Appendix C**. Based on the screening, Palmer has identified potential risks of impacts to four SAR or potential SAR habitat, including Barn Swallow, Blanding's Turtle, Butternut and SAR Bats and has recommended specific mitigation measures for each.

The following summary identifies the mitigation and protection measures specific species that have been confirmed as present on-site or have a higher potential of occurring (e.g., SAR bats).

7.4.1 Barn Swallow

The three Barn Swallow nests were observed within the barn in the CVR_4 area to the north of the golf course lands (**Figure 2**). As this is the determined nesting habitat for these species, and this area is not part of the proposed development, the project will not affect this species.

7.4.2 Blanding's Turtle

Blanding's Turtle was not observed during field surveys; however, the potential remains in the SAM1-4/OAO wetland area (**Figure 3**). As Midland Painted Turtles were observed in this area, there is the potential that the ecological niche that Blanding's Turtle would occupy is filled in the Study Area. Regardless, the project avoids the 100 m radius habitat buffer established for turtle habitats (Section 5.5). As such, the proposed development avoids potential impacts to this species.

7.4.3 Butternut

The proposed development encroaches on the habitat setbacks of all five Butternut observed (**Figure 2**). However, these trees are all identified as Category 1 (Non-retainable) trees. As such, under the ESA these trees could be injured or removed following MECP notification of proposed activity, which is being completed as part of this application.

7.4.4 SAR Bats

Tree clearing is required to develop infrastructure and individual lots. The removal of trees >25 cm in DBH in particular has the potential to remove certain roost opportunities for SAR bats. Therefore, as SAR bats hibernate in caves generally from late September to early April, tree removal must occur within this period to avoid harm or impacts to individuals (i.e., **tree clearing only between October 1 to March 31st**) (Ministry of Environment, Conservation and Parks, May 13, 2021). This timing has the advantage of avoiding both the high bat activity and breeding bird (MBCA) windows.

7.5 Significant Wildlife Habitat

Nine SWH types have been identified as Confirmed or Candidate sites within the Study Area (Section 5.5). Eight of these nine types have been identified as being contained within the wetlands and woodlands on the east side of the Study Area (**Figures 2 and 3**), and the SAM1-4/OAO area in particular. The proposed development has been designed to avoid this area, and the recreational space and Stormwater pond provide a vegetated buffer to these areas. **Figure 3** shows that both the 100 m radius and 120 m radius that define specific habitat radii (Section 5.5) are largely outside the proposed development, with a minor amount within the recreational green space area. The green spaces in this area will serve to extend habitat. It is recommended that portions of the green space and stormwater pond, including that nearest to the treed limit specifically, include landscape plantings of native tree and shrub species to provide additional buffering and habitat opportunities.

Due to the overlap of the SWH radii and the Golden-winged Warbler habitat (**Photo L, Figure 3**) within the northern part of the Open Recreation area, it is recommended that this area be left is its current natural state, extending to include the current connection to the stormwater management pond. This will ensure that there is a low-level meadow extension area from the woodland to allow for habitat for woodland fringe species, including Golden-winged Warbler.

Bat Maternity Colonies are expected to have the highest potential to be found in the eastern portion of the Study Area; and potentially the FOD6-3 inclusion area in the southwest of the Study Area, where the largest DBH trees in the areas are found (**Figure 2**). Both these areas are avoided and would not be impacted by the proposed development. Treed areas within the golf course itself would require clearing; however, as these areas are thin and linear, they are unlikely to hold >10/ha cavity trees >25 cm DBH that would constitute SWH Bat Maternity Colonies. However, these areas are not the highest potential areas, nor would this minor tree removal significantly affect roost opportunities in the general area. As such, provided tree removal tree occur outside the high bat activity window (e.g., clearing to occur between **October 1 to March 31st**), potential impacts to this SWH type are felt to be avoided and mitigated.

Avoiding these wooded areas also avoids appreciable impacts to Area-sensitive Bird habitat and areas where uncommon flora species were observed in the Study Area.

7.6 Additional Wildlife Considerations – Noise and Lighting

Noise created by human activity may reduce wildlife use of an area. However, noise is not anticipated to increase significantly in the local area as a result of the proposed development, as the area is currently an actively used golf course. The proposed development is consistent with surrounding land uses and an increase in noise beyond reasonable levels, outside of the construction period is not anticipated.

Artificial lighting can have an impact on nocturnal movement of wildlife. To minimize impacts to wildlife, it is recommended that outdoor lights be hooded and directed at the ground and/or away from natural areas. The use of motion detectors should be avoided, to limit impacts on the nocturnal movement of animals.

7.7 Breeding Birds and Bat Habitat

There is a limited removal of trees required for the proposed development. The removal of trees within the golf course is not considered to remove significant habitat for breeding birds. Limited removals of trees and shrubs will also be required within the woodlands to the southwest of the Study Area. However, this will not affect the capacity of these areas to support breeding bird habitat in woodland areas. The removal of trees in the areas to the east of the Study Area are avoided, where the greatest habitat opportunities exist, including area-sensitive interior habitats. Therefore, the proposed development is considered negligible impacts to bird habitats, including for Eastern Wood-Pewee and area-sensitive birds. The recommendations to retain the identified Golden-winged Habitat between the eastern woodlands and the stormwater management will also avoid the identified Golden-winged Warbler territory (**Figure 3**). With the implementation of the above mitigations, the proposed development is not predicted to have negative impacts to the woodland with warbler fringe habitat, and its ecological functions, including habitat for Species of Special Concern.

As a conservative measure, to avoid potential interaction with both SAR and non-SAR bats and birds, a combined tree-clearing timing window has been recommended to avoid both breeding birds (as per the MBCA) and roosting bats. To avoid impacts to breeding birds, tree clearing within the C2 and C3 nesting calendar periods should be avoided, which is primarily April 1 to the end of August (Government of Canada, 2018). In order to avoid potential impacts to bat species, all tree removals should be completed outside the bat maternity roost season and hibernation period of April 1 to September 30 (Ministry of Natural Resources, 1984; Ontario Ministry of Natural Resources, 2011; Ministry of Environment, Conservation and Parks, May 13, 2021).

8. Policy Conformity

8.1 Provincial Policy Statement

Through implementation of the project design and recommendations presented in this EIS, the development as proposed complies with the Provincial Policy Statement. According to the PPS, development is generally prohibited within significant natural heritage features (NHF) as defined in the policy. In accordance with this guideline, the development envelope of the proposed development takes advantage of existing disturbances (the golf course) and has been situated outside of the on-site natural heritage features. Furthermore, measures have been recommended to ensure protection of these features (Section 7).

The proposed development with recommended mitigations avoids wetland, valleyland, fish habitat and SAR habitat natural heritage features. With recommended mitigations, eight of the confirmed or potential SWH types are also avoided. While not considered as Significant Woodlands (Section 7.2), the project will require the removal of a minor amount of woodland and the potential for it to contain the Bat Maternity Colony SWH habitat. Therefore, a *No Net Negative Impact Test* has been evaluated for these types.

8.1.1 No Negative Impact Test

According to the Provincial Policy Statement, development is prohibited within certain significant natural heritage features (NHF), while for others, proposed development must demonstrate no negative impacts on the natural features or their ecological functions. These NHF types include Significant Woodlands and SWH (Section 2.1).

Tree clearing within the Study Area would be limited to the linear arms of trees within the golf course and fringes of the southwest woodland above Top of Bank. These linear arms have experienced active use and human disturbance over time due to golf course activity and are not significant portions of the overall woodland area. Clearing at the fringes of the southwest forested area may also be required, where it is recommended that building envelopes (that would contain the limits of built structures and hard surfaces) require a minimum of 10 m of clearance to the Top of Bank.

When looking at available forest habitat in the overall general area (Peterborough County), these required removals are limited, and constrained to fringes and areas of reduced quality and functions. Their removal would not measurably reduce the amount of woodland or potential functions (including SWH) in the overall area (**Figure 1**). As such, the proposed development would not constitute a negative impact that would affect the Natural Heritage Features and functions that define Significant Woodlands or the potential that the general area holds to contain Bat Maternity Colonies. This is determined by applying a No Negative Impact Test, as per the Natural Heritage Reference Manual (Ontario Ministry of Natural Resources, 2010), which under Section 13.2 provides guidance on “Determining Negative Impacts”.

> *“To determine negative impacts on a significant natural heritage feature or area, the cumulative negative impacts from development or site alteration activities (e.g., impacts that adversely affect the stability of the feature and its ability to continue) must be considered against the integrity of the feature. The current and future ecological function of the natural feature or area as they relate to the surrounding natural heritage system (e.g., connectivity) must be considered as well. The PPS*

> *definition for "negative impacts" does not state that all impacts are negative, nor does it preclude the use of mitigation to prevent, modify or alleviate the impacts to the significant natural heritage feature or area"* (OMNR 2010; emphasis added).

Applying the above to the "No Negative Impact Test" for the proposed removal of trees in the development area, it can be determined that there will be no cumulative negative impacts because the existing features and functions of the overall woodlands will remain intact. Due to the design of the proposed development, which includes repurposing an existing disturbance and careful siting within the landscape, it is our opinion that impacts are largely avoided. Natural processes will continue, and landscape connectivity and species populations will be maintained. Integration with the adjacent features, wildlife habitat, and the hydrological contributions to water features will be maintained due to the limited clearing and avoidance of features on the east side of the Study Area. With the application of mitigations described in Section 7, there are no predicted appreciable negative impacts from tree clearing for the proposed development to the woodlands and SWH habitat in the general area.

Therefore, the proposed development is considered to conform to the Provincial Policy Statement.

8.2 County of Peterborough

The proposed development conforms to the County of Peterborough Official Plan (Peterborough County, 2022).

The Official Plan looks to map and protect Natural Heritage Features in the County. The mapped ECA and other natural features as mapped by the MNRF, and refined in this study, have been avoided and appropriately setback from the proposed development (**Figure 3**). The Official Plan also prohibits development and site alterations within natural heritage features in accordance with the Provincial Policy Statement (PPS). Meaning, that it must be demonstrated that development will have no negative impacts on the natural features or their ecological functions. For wetlands specifically, development must also avoid a 15 m VPZ.

Following the above, the proposed development avoids mapped ECA and natural heritage features, including significant wetlands and fish habitat, and avoids or appropriately mitigates for SAR and SAR habitats. For the wetlands, specifically those to the east of the Site, a 30 m Setback has been recommended due to the habitat quality of the wetlands, in excess of the 15 m VPZ requirement of the OP. A limited amount of development is proposed in adjacent woodlands and SWH types contained; this disturbance has been limited to the degree feasible and mitigations recommended. As seen in Section 8.1, these impacts meet the PPS No Negative Impact Test.

The Top of Bank to the east and west of the Study Area have been used to direct development to outside of potential hazard areas, following Policy 6.4.1 of the OP. The conceptual design also ensures that all lots within the Study Area are accessible from above the valley limits.

8.3 Endangered Species Act

The habitats for Barn Swallow and Blanding's Turtle have been avoided in the design of the Proposed Development and no impacts are expected.

A Butternut Health Assessment (BHA) has been completed for all five trees observed on the Study Area, which determined that all are Category 1 trees. As such, their removal will not contravene the ESA following registry. The BHA will be registered with the MECP as part of this project.

Based on the results of our field surveys and habitat screening, there is the potential for negligible impacts to SAR bat habitat due to minor tree removal in cultural lands and from the fringes of the adjacent woodlands. The timing window mitigation outlined in Section 7.4 and 7.6 avoids potential contravention of the Act in the event SAR bats are present.

Providing these avoidance and mitigation measures are implemented, the proposed development conforms to the ESA.

8.4 Migratory Birds Convention Act and SWH Bat Habitat

Works with potential *Migratory Birds Convention Act* (MBCA) implications may occur during the construction phase of the project when the Subject Property is cleared and grubbed of vegetation. Compliance with the MBCA may be achieved using the following due diligence approach, including:

- Proponent awareness of the MBCA and the potential for bird nesting in the area and for inadvertent impacts to migratory birds, nests and eggs.
- Avoiding tree/vegetation removal within the “regional nesting period” for this area (generally mid April to late August).
    - However, it is recommended that this timing window be extended to include the bat maternity roost season and hibernation period of April 1 to September 30.

9. Conclusions

The findings of our study are the result of a background review, field investigations and an analysis of data using a scientific understanding of the ecology of the area, as well as the current natural heritage policy requirements. We have evaluated the environmental sensitivities, constraints and development opportunities of the Subject Property, which are described in this report and illustrated on **Figure 3**.

Based on the results of the EIS it is our professional opinion that the proposed development of the Conceptual Site Plan is environmentally feasible and would not result in negative impacts to the natural heritage features, provided that the recommended mitigation and enhancement measures described in this report are implemented.

10. Certification

This report was prepared, reviewed and approved by the undersigned:

Prepared By:

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Prepared and Reviewed By:

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Senior Ecologist

Reviewed By:

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Senior Ecologist

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Operations Division, Southern Region Resources Section and Northeast Region Resources Section.

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Appendix A

Flora List

Appendix A – Flora List

Family	Scientific Name	Common Name	COSEWIC	SARA	SARO	NHIC Ranks			Coefficient of Conservatism	Coefficient of Wetness
						Global	Provincial	Exotic		
Aceraceae	*Acer rubrum*	Red Maple				G5	S5		4	0
Aceraceae	*Acer saccharinum*	Silver Maple				G5	S5		5	-3
Aceraceae	*Acer saccharum*	Sugar Maple				G5	S5		4	3
Alismataceae	*Alisma triviale*	Northern Water-plantain				G5	S5		1	-5
Anacardiaceae	*Rhus typhina*	Staghorn Sumac				G5	S5		1	3
Anacardiaceae	*Toxicodendron radicans*	Poison Ivy				G5	S5		2	0
Apiaceae	*Cicuta maculata*	Spotted Water-hemlock				G5	S5		6	-5
Apocynaceae	*Apocynum androsaemifolium*	Spreading Dogbane				G5	S5		3	5
Apocynaceae	*Vincetoxicum rossicum*	European Swallowwort				GNR	SNA	SE5		5
Araliaceae	*Aralia nudicaulis*	Wild Sarsaparilla				G5	S5		4	3
Asteraceae	*Erigeron philadelphicus*	Philadelphia Fleabane				G5	S5		1	-3
Asteraceae	*Eurybia macrophylla*	Large-leaved Aster				G5	S5		5	5
Asteraceae	*Eutrochium maculatum*	Spotted Joe Pye Weed				G5	S5		3	-5
Asteraceae	*Leucanthemum vulgare*	Oxeye Daisy				GNR	SNA	SE5		5
Asteraceae	*Nabalus albus*	White Rattlesnakeroot				G5	S5		6	3
Asteraceae	*Pilosella aurantiaca*	Orange Hawkweed				GNR	SNA	SE5		5
Asteraceae	*Solidago nemoralis*	Grey-stemmed Goldenrod				G5	S5		2	5
Asteraceae	*Symphyotrichum cordifolium*	Heart-leaved Aster				G5	S5		5	5
Asteraceae	*Tanacetum vulgare*	Common Tansy				GNR	SNA	SE5		5
Asteraceae	*Tripleurospermum inodorum*	Scentless Chamomile				GNR	SNA	SE		0
Asteraceae	*Tussilago farfara*	Coltsfoot				GNR	SNA	SE5		3
Balsaminaceae	*Impatiens capensis*	Spotted Jewelweed				G5	S5		4	-3
Betulaceae	*Alnus incana* ssp. *rugosa*	Speckled Alder				G5T5	S5		6	-3

Legend:

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

SARA - Ontario Species at Risk Act List

SARO - Species at Risk in Ontario

NHIC - Natural Heritage Information Centre

Coefficients (Conservatism and Wetness) – Oldham et al., 1995

Family	Scientific Name	Common Name	COSEWIC	SARA	SARO	NHIC Ranks			Coefficient of Conservatism	Coefficient of Wetness
						Global	Provincial	Exotic		
Betulaceae	*Betula papyrifera*	Paper Birch				G5	S5		2	3
Betulaceae	*Ostrya virginiana*	Eastern Hop-hornbeam				G5	S5		4	3
Campanulaceae	*Campanula aparinoides*	Marsh Bellflower				G5	S5		7	-5
Caprifoliaceae	*Viburnum nudum var. cassinoides*	Wild Raisin				G5T5	S5		7	-3
Caryophyllaceae	*Stellaria borealis*	Boreal Starwort				G5	S5		10	-3
Cornaceae	*Cornus alternifolia*	Alternate-leaved Dogwood				G5	S5		6	3
Cornaceae	*Cornus sericea*	Red-osier Dogwood				G5	S5		2	-3
Cupressaceae	*Juniperus horizontalis*	Creeping Juniper				G5	S5		10	3
Cupressaceae	*Juniperus virginiana*	Eastern Red Cedar				G5	S5		4	3
Cupressaceae	*Thuja occidentalis*	Eastern White Cedar				G5	S5		4	-3
Cyperaceae	*Carex aquatilis*	Water Sedge				G5	S5		7	-5
Cyperaceae	*Carex brunnescens*	Brownish Sedge				G5	S5		6	-3
Cyperaceae	*Carex flava*	Yellow Sedge				G5	S5		5	-5
Cyperaceae	*Carex gracillima*	Graceful Sedge				G5	S5		4	3
Cyperaceae	*Carex interior*	Inland Sedge				G5	S5		6	-5
Cyperaceae	*Carex intumescens*	Bladder Sedge				G5	S5		6	-3
Cyperaceae	*Carex normalis*	Larger Straw Sedge				G5	S4		6	-3
Cyperaceae	*Carex pseudocyperus*	Cyperus-like Sedge				G5	S5		6	-5
Cyperaceae	*Carex sterilis*	Sterile Sedge				G4G5	S4		10	-5
Cyperaceae	*Carex vulpinoidea*	Fox Sedge				G5	S5		3	-5
Cyperaceae	*Schoenoplectus tabernaemontani*	Soft-stemmed Bulrush				G5	S5		5	-5
Cyperaceae	*Scirpus atrovirens*	Dark-green Bulrush				G5	S5		3	-5
Cyperaceae	*Scirpus cyperinus*	Common Woolly Bulrush				G5	S5		4	-5
Dryopteridaceae	*Athyrium filix-femina*	Common Lady Fern				G5	S5		4	0
Dryopteridaceae	*Dryopteris carthusiana*	Spinulose Wood Fern				G5	S5		5	-3
Dryopteridaceae	*Gymnocarpium dryopteris*	Common Oak Fern				G5	S5		7	3

Legend:

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NHIC - Natural Heritage Information Centre

Coefficients (Conservatism and Wetness) – Oldham et al., 1995

Family	Scientific Name	Common Name	COSEWIC	SARA	SARO	NHIC Ranks			Coefficient of Conservatism	Coefficient of Wetness
						Global	Provincial	Exotic		
Dryopteridaceae	*Onoclea sensibilis*	Sensitive Fern				G5	S5		4	-3
Equisetaceae	*Equisetum pratense*	Meadow Horsetail				G5	S5		8	-3
Fabaceae	*Amphicarpaea bracteata*	American Hog-peanut				G5	S5		4	0
Fabaceae	*Medicago lupulina*	Black Medick				GNR	SNA	SE5		3
Fabaceae	*Robinia pseudoacacia*	Black Locust				G5	SNA	SE5		3
Fabaceae	*Trifolium hybridum*	Alsike Clover				GNR	SNA	SE5		3
Fabaceae	*Trifolium pratense*	Red Clover				GNR	SNA	SE5		3
Fagaceae	*Quercus macrocarpa*	Bur Oak				G5	S5		5	3
Fagaceae	*Quercus rubra*	Northern Red Oak				G5	S5		6	3
Grossulariaceae	*Ribes glandulosum*	Skunk Currant				G5	S5		6	-3
Hydrocharitaceae	*Elodea canadensis*	Canada Waterweed				G5	S5		4	-5
Iridaceae	*Iris prismatica*	Slender Blue Flag				G4G5	SNA	SE1		
Juglandaceae	*Carya glabra*	Pignut Hickory				G5	S3		9	3
Juglandaceae	*Juglans nigra*	Black Walnut				G5	S4?		5	3
Lamiaceae	*Clinopodium vulgare*	Wild Basil				G5	S5		4	5
Lamiaceae	*Lycopus americanus*	American Water-horehound				G5	S5		4	-5
Lamiaceae	*Lycopus europaeus*	European Water-horehound				GNR	SNA	SE5		-5
Lamiaceae	*Prunella vulgaris*	Common Self-heal				G5	S5		0	0
Lemnaceae	*Lemna minor*	Small Duckweed				G5	S5?		5	-5
Liliaceae	*Clintonia borealis*	Yellow Clintonia				G5	S5		7	0
Liliaceae	*Maianthemum canadense*	Wild Lily-of-the-valley				G5	S5		5	3
Liliaceae	*Maianthemum racemosum*	Large False Solomon's Seal				G5	S5		4	3
Liliaceae	*Trillium sp.*	Trillium Species								
Lythraceae	*Lythrum salicaria*	Purple Loosestrife				G5	SNA	SE5		-5
Nymphaeaceae	*Nuphar advena*	Large Yellow Pond-lily				GNR	S3		8	-5
Nymphaeaceae	*Nymphaea odorata*	Fragrant Water-lily				G5	S5		5	-5
Oleaceae	*Fraxinus nigra*	Black Ash	THR			G5	S3		7	-3

Legend:

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NHIC - Natural Heritage Information Centre

Coefficients (Conservatism and Wetness) – Oldham et al., 1995

Family	Scientific Name	Common Name	COSEWIC	SARA	SARO	NHIC Ranks			Coefficient of Conservatism	Coefficient of Wetness
						Global	Provincial	Exotic		
Oleaceae	*Fraxinus pennsylvanica*	Red Ash				G5	S4		3	-3
Onagraceae	*Circaea alpina*	Small Enchanter's Nightshade				G5	S5		6	-3
Onagraceae	*Circaea canadensis ssp. canadensis*	Canada Enchanter's Nightshade				G5T5	S5		2	3
Onagraceae	*Epilobium sp.*	Willow-herb Species								
Orchidaceae	*Epipactis helleborine*	Broad-leaved Helleborine				GNR	SNA	SE5		3
Pinaceae	*Abies balsamea*	Balsam Fir				G5	S5		5	-3
Pinaceae	*Larix laricina*	Tamarack				G5	S5		7	-3
Pinaceae	*Picea glauca*	White Spruce				G5	S5		6	3
Pinaceae	*Pinus strobus*	Eastern White Pine				G5	S5		4	3
Pinaceae	*Tsuga canadensis*	Eastern Hemlock				G5	S5		7	3
Plantaginaceae	*Plantago lanceolata*	English Plantain				G5	SNA	SE5		3
Poaceae	*Bromus tectorum*	Downy Brome				GNR	SNA	SE5		5
Poaceae	*Dactylis glomerata*	Orchard Grass				GNR	SNA	SE5		3
Poaceae	*Oryzopsis sp.*	Mountain Ricegrass Species								
Poaceae	*Phalaris arundinacea*	Reed Canarygrass				G5	S5		0	-3
Poaceae	*Phleum pratense*	Common Timothy				GNR	SNA	SE5		3
Poaceae	*Poa palustris*	Fowl Bluegrass				G5	S5		5	-3
Poaceae	*Poa pratensis*	Kentucky Bluegrass				G5	S5		0	3
Ranunculaceae	*Ranunculus acris*	Common Buttercup				G5	SNA	SE5		0
Ranunculaceae	*Thalictrum dioicum*	Early Meadow-rue				G5	S5		6	3
Rhamnaceae	*Rhamnus cathartica*	European Buckthorn				GNR	SNA	SE5		0
Rosaceae	*Crataegus monogyna*	English Hawthorn				G5	SNA	SE4		3
Rosaceae	*Fragaria virginiana*	Wild Strawberry				G5	S5		2	3
Rosaceae	*Potentilla norvegica*	Rough Cinquefoil				G5	S5		0	0
Rosaceae	*Potentilla recta*	Sulphur Cinquefoil				GNR	SNA	SE5		5
Rosaceae	*Prunus pensylvanica*	Pin Cherry				G5	S5		3	3

Legend:

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NHIC - Natural Heritage Information Centre

Coefficients (Conservatism and Wetness) – Oldham et al., 1995

Family	Scientific Name	Common Name	COSEWIC	SARA	SARO	NHIC Ranks			Coefficient of Conservatism	Coefficient of Wetness
						Global	Provincial	Exotic		
Rosaceae	*Rosa sp.*	Rose Species								
Rosaceae	*Rubus idaeus*	Red Raspberry				G5	S5		2	3
Rosaceae	*Rubus pubescens*	Dwarf Raspberry				G5	S5		4	-3
Rubiaceae	*Galium aparine*	Common Bedstraw				G5	S5		4	3
Rubiaceae	*Galium trifidum*	Three-petalled Bedstraw				GNR	S5		5	-3
Salicaceae	*Populus balsamifera*	Balsam Poplar				G5	S5		4	-3
Salicaceae	*Populus tremuloides*	Trembling Aspen				G5	S5		2	0
Salicaceae	*Salix bebbiana*	Bebb's Willow				G5	S5		4	-3
Salicaceae	*Salix discolor*	Pussy Willow				G5	S5		3	-3
Salicaceae	*Salix exigua*	Coyote Willow							3	-5
Saxifragaceae	*Mitella diphylla*	Two-leaved Mitrewort				G5	S5		5	3
Scrophulariaceae	*Verbascum thapsus*	Common Mullein				GNR	SNA	SE5		5
Scrophulariaceae	*Veronica officinalis*	Common Speedwell				G5	SNA	SE5		5
Solanaceae	*Solanum dulcamara*	Bittersweet Nightshade				GNR	SNA	SE5		0
Typhaceae	*Typha latifolia*	Broad-leaved Cattail				G5	S5		1	-5
Ulmaceae	*Ulmus americana*	White Elm				G4	S5		3	-3
Violaceae	*Viola sp.*	Violet Species								
Vitaceae	*Parthenocissus quinquefolia*	Virginia Creeper				G5	S4?		6	3
Vitaceae	*Vitis riparia*	Riverbank Grape				G5	S5		0	0
Zannichelliaceae	*Zannichellia palustris*	Horned Pondweed				G5	S4		4	-5

Legend:

COSEWIC - Committee on the Status of Endangered Wildlife in Canada

SARA - Ontario Species at Risk Act List

SARO - Species at Risk in Ontario

NHIC - Natural Heritage Information Centre

Coefficients (Conservatism and Wetness) – Oldham et al., 1995

Appendix B

Breeding Bird Survey Results

Breeding Birds of Woodview Golf

Common Name	Scientific Name	Status					Number of Pairs/ Territories		
		National Species at Risk COSEWIC [a]	Species at Risk in Ontario Listing [a]	Provincial breeding season SRANK [b]	Regional Status	Area-sensitive (OMNR) [c]	1	2	3
Mallard	*Anas platyrhynchos*			S5			1		
Merlin	*Falco columbarius*			S5					1
Killdeer	*Charadrius vociferus*			S5			3		
Ring-billed Gull	*Larus delawarensis*			S5			1 (f)		
Yellow-bellied Sapsucker	*Sphyrapicus varius*			S5		A		2	2
Northern Flicker	*Colaptes auratus*			S4					1
Eastern Wood-Pewee	*Contopus virens*	SC	SC	S4				1	1
Alder Flycatcher	*Empidonax alnorum*			S5					1
Eastern Phoebe	*Sayornis phoebe*			S5			1		1
Great Crested Flycatcher	*Myiarchus crinitus*			S4				1	1
Eastern Kingbird	*Tyrannus tyrannus*			S4				1	1
Barn Swallow	*Hirundo rustica*	THR	THR	S4			3 (f)		
Blue Jay	*Cyanocitta cristata*			S5					4
American Crow	*Corvus brachyrhynchos*			S5			1		1
Black-capped Chickadee	*Poecile atricapillus*			S5					3
Veery	*Catharus fuscescens*			S4		A		1	1
American Robin	*Turdus migratorius*			S5			5	1	1
Brown Thrasher	*Toxostoma rufum*			S4					1
Cedar Waxwing	*Bombycilla cedrorum*			S5			3		
European Starling	*Sturnus vulgaris*			SE			1		
Blue-headed Vireo	*Vireo solitarius*			S5		A			1
Red-eyed Vireo	*Vireo olivaceus*			S5			3	4	7
Golden-winged Warbler	*Vermivora chrysoptera*	THR	SC	S4					1
Yellow Warbler	*Setophaga petechia*			S5			1		
Chestnut-sided Warbler	*Setophaga pensylvanica*			S5					1
Magnolia Warbler	*Setophaga magnolia*			S5		A		1	
Black-throated Green Warbler	*Setophaga virens*			S5		A			1
Black-and-white Warbler	*Mniotilta varia*			S5		A		1	3
Ovenbird	*Seiurus aurocapillus*			S4		A		1	4
Northern Waterthrush	*Parkesia noveboracensis*			S5					1
Common Yellowthroat	*Geothlypis trichas*			S5			1	2	3
Scarlet Tanager	*Piranga olivacea*			S4		A			1
Rose-breasted Grosbeak	*Pheucticus ludovicianus*			S4			1	1	1
Indigo Bunting	*Passerina cyanea*			S4			1	1	
Chipping Sparrow	*Spizella passerina*			S5			2		1
Clay-colored Sparrow	*Spizella pallida*			S4			1		
Field Sparrow	*Spizella pusilla*			S4			1		
Savannah Sparrow	*Passerculus sandwichensis*			S4		A	2		
Song Sparrow	*Melospiza melodia*			S5			4	2	4
Swamp Sparrow	*Melospiza georgiana*			S5				1	5
White-throated Sparrow	*Zonotrichia albicollis*			S5					1
Red-winged Blackbird	*Agelaius phoeniceus*			S4			1	1	2
Common Grackle	*Quiscalus quiscula*			S5			1		2
Purple Finch	*Carpodacus purpureus*			S4					2
American Goldfinch	*Cardeulis tristis*			S5			3	1	

Field Work Conducted On:	Date	Temp (°C)	Wind Speed (km/h)	Cloud Cover (%)	Start time	End time
Site visit 1	10-Jun-22	11	12	75	6:15	10:30
Site visit 2	21-Jun-22	16	0	90	6:45	9:30

Common Name	Scientific Name	Status					Number of Pairs/ Territories		
		National Species at Risk COSEWIC [a]	Species at Risk in Ontario Listing [a]	Provincial breeding season SRANK [b]	Regional Status	Area-sensitive (OMNR) [c]	1	2	3

Location 1 - Golf Course (CGL_1, CUM1-1, CUT1-1, CVC_2, CVR_4, TAGM5, CUP3-2, CUP3-6, SWMP)
Location 2 - Forest/Wetland (southwest FOD5-6, FOD6-3, MAM2-2, MAS2, SAM1-4/OAO)
Location 3 - Outside Proposed Development (FOD7-2, SWM1-1, SWD1-2, SWD2-1, large eastern FOD5-6)

Number of Species:	46
Number of (provincial and national) Species at Risk:	3
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	9

Location 1

Number of Species:	22
Number of (provincial and national) Species at Risk:	1
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	1

Location 2

Number of Species:	17
Number of (provincial and national) Species at Risk:	1
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	5

Location 3

Number of Species:	32
Number of (provincial and national) Species at Risk:	2
Number of S1 to S3 (provincially rare) Species:	0
Number of Regionally Rare Species:	0
Number of Area-sensitive Species:	7

KEY

a COSEWIC = Committee on the Status of Endangered Wildlife in Canada

a Species at Risk in Ontario List (as applies to ESA) as designated by COSSARO (Committee on the Status of Species at Risk in Ontar
END = Endangered, THR = Threatened, SC = Special Concern

[b] SRANK (from Natural Heritage Information Centre) for breeding status if:
S1 (Critically Imperiled), S2 (Imperiled),S3 (Vulnerable), S4 (Apparently Secure), S5 (Secure)
SZB (breeding migrants or vagrants) and SR (reported as breeding, but no persuasive documentation) .
SE (exotic, i.e. non-native)

c Ontario Ministry of Natural Resources (OMNR). 2000. Significant Wildlife Habitat Technical Guide (Appendix G). 151 p plus appendice

Appendix C

Species at Risk Screening

Appendix C: Species at Risk Screening

NAME	Provincial Status (ESA)	HABITAT REQUIREMENTS	SOURCE OF RECORD	POTENTIAL HABITAT PRESENT (Y/N)	RATIONALE	POTENTIAL IMPACTS AND MITIGATION
AVIFAUNA						
Eastern Wood-Pewee (*Contopus virens*)	SC	The Eastern Wood-pewee is classified as a species of special concern by COSSARO. Their population has been gradually declining since the mid-1960's (The Cornell Lab of Ornithology, 2015). The Eastern Wood-pewee is a "flycatcher", a bird that eats flying insects, that lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation. Threats to the population are largely unknown; however, causes may include loss of habitat due to urban development and decreases in the availability of flying insect prey (Ministry of Natural Resources and Forestry, 2014).	OBBA	Yes	This species was obsereved in the woodlands to the southwest and east of the Study Area.	Planned tree removal will remove a negligible amount of habitat in the general overall area. Clearing outside of the nesting season should avoid potential interactions.
Golden-winged Warbler (*Vermivora chrysoptera*)	SC	The Golden-winged Warbler is classified as a species of special concern by COSSARO. It is a small grey songbird, with yellow patches on its wings and forehead. Nests are built on the gound, in areas with young shrubs surrounded by mature forest. Threats to the species include habitat loss, hybridization with blue-winged warblers, and nest parasitism by brown-headed cowbirds (Ministry of Natural Resources and Forestry, 2014).	OBBA	Yes	This species was obsereved in the woodlands to the east of the Study Area.	The woodlands will be maintained and building envelopes setback from the woodland edge. Tree clearing will be generally avoided in this area and clearing outside of the nesting season should avoid potential interactions.
Barn Swallow (*Hirundo rustica*)	THR	The Barn Swallow is a threatened species, is found throughout southern Ontario, and can range into the north as long as suitable nesting locations can be found. These birds prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud; they are typically attached to horizontal beams or vertical walls underneath an overhang. A significant decline in populations of this species has been documented since the mid-1980s, which is thought to be related to a decline in prey. Since the Barn Swallow is an aerial insectivore, this species relies on the presence of flying insects at specific times during the year. Changes in building practices and materials may also be having an impact on this species (Ministry of Natural Resources and Forestry, 2015).	OBBA	Yes	This species was observed in the Barns to the north of the Study Area	The Barns and adjacent fields are being retained and are not part of the development concept area, and impacts will be avoided.
Cerulean Warbler (*Setophaga cerulea)*	THR	The Cerulean Warbler is a small wood-warbler that breeds in a few areas in southern Ontario. A general continental decline of this species has been observed, possibly greater than that of any other wood-warbler. The cerulean warbler requires relatively large tracts of forest, and as such, the main threat to this species is habitat loss due to forest degradation and fragmentation. In Ontario, the Cerulean Warbler nests in older, second-growth deciduous forests. During breeding season, it is found in relatively large tracts of mature deciduous forests that feature large, tall trees and an open understorey. The species is considered area-sensitive and have demonstrated edge effects up to 340 metres in the forest, with abundance positively correlated to the distance from the edge. Trees that leaf late (Bitternut Hickory; oaks) provide singing posts in its Ontario range (Environment Canada, 2011).	NHIC	No	Species not observed during Breeding Birds Surveys.	None
VASCULAR PLANTS						
Butternut (*Juglans cinerea*)	END	The butternut is designated as endangered by COSSARO and is tracked by the NHIC as a species at risk. The tree is federally regulated by the Species at Risk Act (2002). Butternut belongs to the walnut family and produces edible nuts which are a preferred food source for wildlife. The range of butternut trees is south of the Canadian Shield on soils derived from calcium rich limestone bedrock. Butternut trees, which at one time were much more common to the south extending to the northern aspect of zone 6E, have been declining due to factors including forest loss and disease. Butternut trees suffer from a highly transmissible fungal disease called butternut canker. Butternut canker is causing very rapid decline in this tree species across its native range. The fungal disease is easily transmitted by wind and is very difficult to prevent. Trees often die within a few years of infection by butternut canker (Ministry of Natural Resource and Forestry, 2014).	Professional Exeperience	Yes	Five Butternut trees were located within the Study Area. During Butternut Health Assessment, all 5 were determined to be Category 1 (non-retainable) trees.	None. Removal is possible for Category 1 trees under the ESA. The activity will be registered with the MNRF.
INSECTS						

NAME	Provincial Status (ESA)	HABITAT REQUIREMENTS	SOURCE OF RECORD	POTENTIAL HABITAT PRESENT (Y/N)	RATIONALE	POTENTIAL IMPACTS AND MITIGATION
Monarch Butterfly (*Danaus plexippus*)	SC	The monarch is an orange and black butterfly with small white spots and is classified as a species of special concern by COSSARO. The monarch relies on milkweed plants as a food source for growing caterpillars, but the adult butterflies forage in diverse habitats for nectar from wildflowers. The greatest threat to the monarch is loss of overwintering habitat in Mexico. Other threats include use of pesticides and herbicides throughout its range (Ministry of Natural Resources and Forestry, 2014).	OBA	Yes	Monarchs were observed and Common Milkweed found among the flora.	None. While observed, neither Monarch or Milkweed were observed in quantities to qualify as SWH. The proposed development would not limit available habitat in the general area.
MAMMALS						
Eastern Small-footed Myotis (*Myotis leibii*)	END	The eastern small-footed myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Eastern small-footed bat's fur has black roots and shiny light brown tips, giving it a yellowish-brown appearance. Its face mask, ears and wings are black, and its underside is grayish-brown, about 8 cm long in size and weighs 4-5 grams. In the spring and summer, eastern small-footed bats will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects to eat, including beetles, mosquitos, moths, and flies. They hibernate in winter, often in caves and abandoned mines. They can be found from south of Georgian Bay to Lake Erie and east to the Pembroke area, and choose colder and drier sites (Ministry of Natural Resources and Forestry, 2014).	Professional Exeperience	Potential	Bats were incidentally observed during Amphibian surveys, though not identified. The woodlands to west and east of Study Area may provide habitat, including roost trees and water source.	Habitat beyond Tops of Bank will be protected regardless of SAR status/non-status. Clearing will adhere to timing outside the general Bat Activity Window. The amount of required clearing will not affecct overall habitat opportunities in the larger general area.
Little Brown Myotis (*Myotis lucifugus*)	END	Little brown myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Little brown bats have glossy brown fur and usually weigh between four and 11 grams. Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings and barns for summer colonies where they can raise their young. Little brown bats hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing – an ideal environment for the fungus to grow and flourish. The syndrome affects bats by disrupting their hibernation cycle, so that they use up body fat supplies before the spring when they can once again find food sources (Ministry of Natural Resources and Forestry, 2014).	Professional Exeperience	Potential	Bats were incidentally observed during Amphibian surveys, though not identified. The woodlands to west and east of Study Area may provide habitat, including roost trees and water source.	Habitat beyond Tops of Bank will be protected regardless of SAR status/non-status. Clearing will adhere to timing outside the general Bat Activity Window. The amount of required clearing will not affecct overall habitat opportunities in the larger general area.
Northern Myotis (*Myotis septentrionalis*)	END	The northern long-eared myotis, a bat, are an endangered species threatened by a disease known as white nose syndrome, caused by a fungus from Europe. Northern long-eared bats have dull yellow-brown fur with pale grey bellies. They are approximately eight cm long, with a wingspan of about 25 cm, and usually weigh six to nine grams. Northern long-eared bats can be found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April, most often in caves or abandoned mines (Ministry of Natural Resources and Forestry, 2014).	Professional Exeperience	Potential	Bats were incidentally observed during Amphibian surveys, though not identified. The woodlands to west and east of Study Area may provide habitat, including roost trees and water source.	Habitat beyond Tops of Bank will be protected regardless of SAR status/non-status. Clearing will adhere to timing outside the general Bat Activity Window. The amount of required clearing will not affecct overall habitat opportunities in the larger general area.
Tri-colored Bat (Eastern Pipistrelle) (*Perimyotis subflavus*)	END	The eastern pipistrelle is a small bat that is widely distributed in eastern North America and whose range extends north to southern Ontario. The eastern pipistrelle is rare in this region of Ontario which is at the northernmost limit of the natural range for the species. These bats prefer to nest in foliage, tree cavities and woodpecker holes, and are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Eastern pipistrelles feed primarily on small insects and prefer an open forest habitat type in proximity to water (University of Michigan Museum of Zoology, 2004).	Professional Exeperience	Potential	Bats were incidentally observed during Amphibian surveys, though not identified. The woodlands to west and east of Study Area may provide habitat, including roost trees and water source.	Habitat beyond Tops of Bank will be protected regardless of SAR status/non-status. Clearing will adhere to timing outside the general Bat Activity Window. The amount of required clearing will not affecct overall habitat opportunities in the larger general area.
HERPTILES						
Eastern Musk Turtle (*Sternotherus odoratus*)	SC	The eastern musk turtle is a small freshwater turtle with a highly arched shell and a dull black-brown body. These turtles are found primarily in slow moving water bodies with abundant emergent vegetation and mucky bottoms along the southern edge of the Canadian Shield. Wetland drainage and shoreline development are among the most significant contributors to the decline in the population of this species (Ministry of Natural Resources and Forestry, 2014).	NHIC	No	Species not observed in high potential habitat during surveys.	High potential habitat will be protected as part of Turtle SWH type protections for Midland Painted Turtle.

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November, 2022

NAME	Provincial Status (ESA)	HABITAT REQUIREMENTS	SOURCE OF RECORD	POTENTIAL HABITAT PRESENT (Y/N)	RATIONALE	POTENTIAL IMPACTS AND MITIGATION
Snapping Turtle (*Chelydra serpentina*)	SC	The snapping turtle is a species of special concern in Ontario due to the potential for the species to become threatened or endangered as a result of biological factors or other identified threats. While not presently protected by law, the snapping turtle has been recognized as a species of special concern by COSSARO. Snapping turtles spend the majority of their lives in water and travel slightly upland to gravel or sandy embankments or beaches to lay their eggs (Ontario Ministry of Natural Resources and Forestry, 2014).	NHIC	No	Species not observed in high potential habitat during surveys.	High potential habitat will be protected as part of Turtle SWH type protections for Midland Painted Turtle.
Western Chorus Frog (*Pseudacris triseriata*)	-	The Great Lakes/St. Lawrence – Canadian Shield population of the western chorus frog is federally listed as threatened by COSEWIC. This small frog is primarily a lowland terrestrial species that requires access to terrestrial and aquatic habitats in close proximity to one another. Relying on marshes and wooded wetlands adjacent to forested habitats, this species also requires isolated, predator free pools for breeding. Temporary pools, such as vernal pools in wooded areas, are preferred. This species hibernates terrestrially in a variety of environs, including leaf litter, wood debris, and vacant animal burrows (Government of Canada, 2016).	NHIC	No	Species not observed in high potential habitat during surveys.	High potential habitat will be protected as part of Turtle SWH type protections for Midland Painted Turtle.
Common Five-lined Skink (Southern Shield Population) (*Plestiodon fasciatus*)	SC	The common five-lined skink has two (2) distinct populations in Ontario. The population that has the potential to occur in the vicinity of the Site is referred to as the southern shield population. The southern shield population of this species prefers rocky habitats that include open areas for basking (Ministry of Natural Resources and Forestry, 2014).	NHIC	Potential	No species specific surveys were completed.	High potential habitat will be protected as part of Turtle SWH type protections for Midland Painted Turtle.
Blanding's Turtle (*Emydoidea blandingii*)	THR	Blanding's turtles are threatened in Ontario primarily as a result of habitat loss and fragmentation. Blanding's turtles spend the majority of their life cycle in the aquatic environment, using terrestrial sites for travel between habitat patches and to lay clutches of eggs. These turtles prefer shallow nutrient rich water with organic sediment and dense vegetation. Blanding's turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (Government of Canada, 2015).	NHIC	No	Species not observed in high potential habitat during surveys.	High potential habitat will be protected as part of Turtle SWH type protections for Midland Painted Turtle.

Notes:
SC - Special Concern
THR - Threatened
END - Endangered

Appendix D

Significant Wildlife Habitat Screening

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence	Rationale
Seasonal Concentration Areas of Animals					
Waterfowl Stopover and Staging Areas (Terrestrial)	Ducks	CUM + CUT ecosites	Fields with sheet-water flooding mid-March to May	No	Golf Course too active to meet criteria
Waterfowl Stopover and Staging Area (Aquatic)	Ducks, Geese	Ponds, Lakes, Inlets, Marshes, Swamps, Shallow Water Ecosites	Sewage & SWM ponds **not** SWH. Reservoir managed as a large wetland or pond/lake qualifies.	No	Waterfowl in or near criteria quantities not observed during BBS or incidentally.
Shorebird Migratory Stopover Area	Shorebirds	Beaches, Dunes, Meadow Marshes	Shorelines. Sewage treatment ponds and storm water ponds **not** SWH.	No	No beach areas found in Study Area
Raptor Wintering Area	Eagles, Hawks, Owls	**Hawks/Owls:** Combination of both Forest and Cultural Ecosites **Bald Eagle:** Forest or swamp near open water (hunting ground)	**Raptors:** >20ha, with a combo of forest and upland. Meadow (>15ha) with adjacent woodlands. **Eagles:** open water, large trees & snags for roosting.	No	Only one Merlin was observed during BBS near the barn onsite, and no other birds of prey were observed incidentally.
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	Caves, Crevices, mines, karsts	Buildings and active mine sites **not** SWH.	No	No habitat features observed on Study Area.
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	Decidious or mixed forests and swamps.	Mature deciduous and mixed forests with >10/ha cavity trees >25 cm DBH.	Potential	Fringe woodlands may host bat maternity trees.
Turtle Wintering Area	**Turtles** (Midland, N. Map, Snapping)	SW, MA, OA, SA, FEO, BOO (requires open waters)	**Free water beneath ice.** Soft mud substrate. Permanent water bodies, large wetlands, bogs, fens with adequate DO.	Yes	Open waters on east of Study Area confirmed habitat for Midland Painted Turtles. Substrates appropriate.
Reptile Hibernaculum	Snakes	**Snakes:** Any ecosite (esp. w/ rocky areas), other than very wet ones. **Five-lined Skink:** FOD and FOM, FOC1, FOC3 - with rock outcrops	**Access below frost line:** burrows; **rock** crevices, piles or slopes, **stone** fences or foundations. Conifer/shrubby swamps/swales, poor fens, depressions in bedrock w/ accumulations of sphagnum moss or sedge hummock ground cover.	No	No true potential habitat features observed, though could be potential on east and west slopes of site where Canadian Shield is exposed.
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, N. Rough-winged Swallow	Banks, sandy hills/piles, pits, slopes, cliff faces, bridge abutments, silos, barns.	Exposed soil banks, **not** a licensed/permitted aggregate area or new man-made features (2 yrs).	No	Habitat not present in Study Area
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Great Blue Heron, Black-crowned Night Heron, Great Egret, Green Heron	SWM2, SWM3, SWM5, SWM6, SWD1 to SWD7, FET1	Nests in live or dead standing trees in wetlands, lakes, islands and peninsulas. Shrubs and emergents may be used. Nests in trees are 11 - 15 m from ground, near tree tops.	No	Heronries not observed. Only one (unconfirmed) Green Heron incidentially observed. Nesting structures absent at SAM1-4/OAO.
Colonially-nesting Bird Breeding Habitat (Ground)	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird	**Gulls/Terns:** Rocky island or peninsula in lake or river. **Brewer's Blackbird:** close to watercourses in open fields or pastures with scattered trees or shrubs.	**Gulls/Terns:** islands or peninsulas with open water or marshy areas. **Brewers Blackbird colonies:** on the ground in low bushes close to streams and irrigation ditches.	No	Species at or near criteria not observed, only 1 Ring-billed Gull.
Migratory Butterfly Stopover Area	Painted Lady, Red Admiral, **Special Concern:** Monarch	Combination of open (CU) and forested (FO) ecosites (need one from each).	≥10 ha, located within 5 km of Lake Ontario. Undisturbed sites, with preferred nectar species.	No	>>5 km from Lake Ontario.
Landbird Migratory Stopover Areas	All migratory songbirds. All migrant raptor species.	Forest (FO) and Swamp (SW) ecosites	Woodlots >10 ha within 5 km of Lake Ontario. If multiple woodlands are along the shoreline, those <2 km from L. Ontario are more significant.	No	>>5 km from Lake Ontario.
Deer Yarding Areas	White-tailed Deer	Mixed or Conifer ecosites	Determined by MNRF - no studies	No	No mapped areas within Study Area.
Deer Winter Congregation Areas	White-tailed Deer	Mixed or Conifer ecosites	Determined by MNRF - no studies	No	No mapped areas within Study Area.
Rare Vegetation Communities					
Cliffs and Talus Slopes		TAO, TAS, CLO, CLS, TAT, CLT e.g., Niagara Escarpment (contact NEC)	**Cliff:** near vertical bedrock >3m **Talus Slope:** coarse rock rubble at the base of a cliff	No	No cliffs or talus slopes within Study Area
Sand Barren		SBO1, SBS1, SBT1	Sand Barrens >0.5 ha. Vegetation can vary from patchy and barren to tree covered, but <60%. <50% vegetation cover are exotic species.	No	No sand barrens within Study Area
Alvar	*Carex crawei, Panicum philadelphicum, Eleocharis compressa, Scutellaria parvula, Trichostema brachiatum,* Loggerhead Shrike	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	Alvar >0.5 ha. **Need 4 of the 5 Alvar Inidcator Spp**. <50% vegetation cover are exotic species.	No	No Alvars within Study Area

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence	Rationale
Old Growth Forest	Trees >140 yrs; heavy mortaily = gaps. Multi-layer canopy, lots of snags and downed logs	FOD, FOC, FOM, SWD, SWC, SWM	Woodland areas ≥30 ha with a ≥10 ha interior habitat, assuming a 100 m buffer at edge of forest.	No	Woodlands of qualifying size not impinged by proposed development at fringes of larger woodland/wetland tracts.
Savannah	Prairie Grasses w/ trees	TPS1, TPS2, TPW1, TPW2, CUS2	A Savannah is a tallgrass prairie habitat that has tree cover of 25 – 60%. <50% cover of exotic species.	No	No non-cultural savannahs within Study Area.
Tallgrass Prairie	Prairies Grasses dominate	TPO1, TPO2	An open Tallgrass Prairie habitat has < 25% tree cover. Less than 50% cover of exotic species.	No	No praires within Study Area.
Other Rare Vegetation Communities		Provincially Rare S1 - S3 veg. comm. are listed in Appendix M of SWHTG.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	No	No rare community types identified on the Study Area.
Specialized Habitat for Wildlife					
Waterfowl Nesting Area	Ducks	Upland habitats adjacent to: MAS1 to MAS3, SAS1, SAM1, SAF1, MAM1 to MAM6, SWT1, SWT2, SWD1 to SWD4 (>0.5 ha open water wetlands, alone or collectively).	Extends 120 m from a wetland or wetland complex. Upland areas should be at least 120 m wide. Wood Ducks and Hooded Mergansers use cavity trees (>40 cm dbh).	No	Ducks in criteria numbers not observed.
Bald Eagle & Osprey Nesting, Foraging and Perching Habitat	Osprey, Bald Eagle	FOD, FOM, FOC, SWD, SWM, SWC directly adjacent to riparian areas	Nesting areas are associated with waterbodies along forested shorelines, islands, or on structures over water.	No	While potenital habitat exitsts, only one Merlin was observed in the Study Area. No other birds of prey observed.
Woodland Raptor Nesting Habitat	Barred Owl. **Hawks:** N. Goshawk, Cooper's, Sharp-shinned, Red-shouldered, Broad-winged.	Forests (FO), swamps (SW), and conifer plantations	>30 ha with > 10 ha interior habitat.	No	While potenital habitat exitsts, only one Merlin was observed in the Study Area. No other birds of prey observed.
Turtle Nesting Areas	Midland Painted Turtle **Special Concern:** Snapping Turtle, Northern Map Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within: MAS1 to MAS3, SAS1, SAM1, SAF1, BOO1	Nest sites within open sunny areas with soil suitable for digging. Sand and gravel beaches.	Potential	The area SAM1-4/OAO should provide suiteable opportunities. Midland Turtles observed.
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.	Seeps/Springs are areas where ground water comes to the surface.	Any forested area within the headwaters of a stream/river system. **(2 or more confirms SWH type).**	No	Only one seep was observed in the FOD5-6 area on east side of Study Area. Will be avoided by proposed development.
Amphibian Breeding Habitat (Woodland)	Woodland Frogs and Salamanders	FOC, FOM, FOD, SWC, SWM, SWD	Open water wetlands, pond or woodland pool of >500 m^2 within or adjacent to wooded areas. Permanent ponds or holding water until mid-July preferred.	No	Criteria species not heard at required levels for significance.
Amphibian Breeding Habitat (Wetlands)	Toads, Frogs, and Salamanders	SW, MA, FE, BO, OA and SA. Typically isolated (>120m) from woodland ecosites, however larger wetlands may be adjacent to woodlands.	Open water wetland ecosites >500m^2 isolated from woodland ecosites with high species diversity. Permanent water with abundant vegetation for bullfrogs.	Yes	Bullfrogs heard at SAM1-4/OAO and at SWMP.
Woodland Area-Sensitive Bird Breeding Habitat	Birds (area-sensitive species)	FOC, FOM, FOD, SWC, SWM, SWD	Large mature (>60 years) forest stands/woodlots >30 ha. Interior forest habitat >200m from forest edge.	Yes	Area-sensitive species observed; most within eastern portion of Study Area. 3+ species in that woodland/wetland area qualifies it as SWH.
Habitat of Species of Conservation Concern					
Marsh Bird Breeding Habitat	Wetland Birds	MAM1 to MAM6, SAS1, SAM1, SAF1, FEO1, BOO1 **Green Heron**: SW, MA and CUM1	Wetlands with shallow water and emergent vegetation. Gr. Heron @ edges of these types w/ woody cover.	No	Criteria species not observed in BBS.
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, N. Harrier, Savannah Sparrow, **Short-eared Owl (SC)**	CUM1, CUM2	Grassland/meadow >30 ha. Not being actively used for farming. Habitat established for 5 years or more.	No	Habitat without active use not present in the Study Area.
Shrub/Early Successional Bird Breeding Habitat	**Brown Thrasher + Clay-coloured Sparrow (indicators),** Field Sparrow, Black-billed Cuckoo, E. Towhee, Willow Flycatcher, Yellow-breasted Chat, Golden-winged Warbler	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2	Large field areas succeeding to shrub and thicket habitats > 10 ha. Areas not actively used for farming in the last 5 years.	No	Shrub and thicket habitats > 10 ha not within Study Area.
Terrestrial Crayfish	Chimney or Digger Crayfish; Devil Crayfish or Meadow Crayfish	MAM1 to MAM6, MAS1 to MAS3, SWD, SWT, SWM. CUM1 sites with inclusions of the aforementioned.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish (typc. protected by wetland setbacks).	Potential	MAS2 found in east of Study Area, but soils and vegetation make presence unlikely.

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence	Rationale
Special Concern and Rare Wildlife Species	Any species of concern or rare wildlife species	Any ELC code.	Presence of species of concern or rare wildlife species.	Yes	Eastern Wood-pewee observed in woodlands to southwest, and Golden-winged Warbler observed in woodlands on east of Study Area. Black Ash, Pignut Hickory and Large Yellow Pond-lily also all observed in woodlands/wetlands on east side of Study Area.
Animal Movement Corridors					
Amphibians	Amphibians	all ecosites assoc. w/ water	When Breeding Habitat - wetland confirmed	Potential	Eastern portion of Study Area may represent maovement corridors within woodlands and wetlands.
Deer Movement	White-tailed Deer	all forested ecosites	When Deer Wintering Habitat confirmed	No	No mapped areas within Study Area.
Exceptions for Ecoregion 6E					
Mast Producing: 6E-14	Black Bear	Forested Ecosites	>30 ha w/ mast producing species: Cherry (berries), Oak, Beech (nuts).	No	Not in Ecodistrict 6E-14
Leks: 6E-17	Sharp-tailed Grouse	CUM, CUS, CUT	Grassland/meadow >15 ha adjacent to shrublands, >30 ha adjacent to woodlands. Low agricultural intensity.	No	Not in Ecodistrict 6E-17

SWH Type	Associated Species	Associated ELC Ecosites	Habitat Criteria	Presence	Rationale
Seasonal Concentration Areas of Animals					
Waterfowl Stopover and Staging Areas (Terrestrial)	Ducks	Fields, Meadows, Sparse Shrubs: G060-062, G077-079, C093-095, G109-111	Fields with sheet-water flooding mid-March to May	No	Golf Course too active to meet criteria
Waterfowl Stopover and Staging Area (Aquatic)	Ducks, Geese	G142-152: Ponds, Lakes, Inlets, Marshes, open/shrubby fens, Shallow Water Ecosites	Sewage & SWM ponds **not** SWH. Reservoir managed as a large wetland or pond/lake qualifies.	No	Waterfowl in or near criteria quantities not observed during BBS or incidentally.
Shorebird Migratory Stopover Area	Shorebirds	G005-006, G160-162, G170-172, G176-178, G186-188, G204-G214: Beaches, Shorelines	Shorelines. Sewage treatment ponds and storm water ponds **not** SWH.	No	No beach areas found in Study Area
Raptor Wintering Area	Hawks, Owls	Combination of Forest and meadow/field. Woodland Ecosites: G011-019, 023-028, 033-043, 048-059, 064-076,081-092, 097-108, 113-125	Raptor wintering sites: >20ha, with a combo of forest and upland. Meadow (>15ha) with adjacent woodlands.	No	Only one Merlin was observed during BBS near the barn onsite, and no other birds of prey were observed incidentally.
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	Caves, Rock Talus: G158-159, 164, 180-181	Cave, Mines, Karsts. Buildings and active mine sites **not** SWH.	No	No habitat features observed on Study Area.
Bat Maternity Colonies	Big Brown Bat, Silver-haired Bat	Decidious or mixed forests: G016-019, 028, 040-043, 055-059, 070-076, 088-092, 103-108, 118-125	Mature deciduous and mixed forest stands with >10/ha cavity trees >25 cm DBH.	Potential	Fringe woodlands may host bat maternity trees.
Turtle Wintering Area	Turtles	Swamps, Open fens & marshes, Open and shallow water: G128-G135, G140-G152	**Free water beneath ice**. Soft mud substrate. Permanent water bodies, large wetlands, bogs, fens with adequate DO.	Yes	Open waters on east of Study Area confirmed habitat for Midland Painted Turtles. Substrates appropriate.
Reptile Hibernaculum	Snakes	Habitat may be found in any ecosite (esp. w/ rock) other than very wet ones. **Five-lined Skink:** G056-G059, G070-G076, G087-G092, G103-G108, G118-G125	**Access below frost line:** burrows; **rock** crevices, piles or slopes, **stone** fences or foundations. Conifer/shrubby swamps/swales, poor fens, depressions in bedrock w/ accumulations of sphagnum moss or sedge hummock ground cover.	No	No true potential habitat features observed, though could be potential on east and west slopes of site where Canadian Shield is exposed.
Colonially-nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow, Northern Rough-winged Swallow	Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, barns. (long G-list)	Exposed soil banks, sandy hills, borrow pits, steep slopes, and sand piles that are undisturbed or naturally eroding. **Not** a licensed/permitted aggregate area.	No	Habitat not present in Study Area
Colonially-nesting Bird Breeding Habitat (Tree/Shrubs)	Great Blue Heron, Black-crowned Night Heron	Forested Ecosites: G064-G076, G081-G092, G097-G108, G113-G125, G128-G136	Nests in live or dead standing trees in wetlands, lakes, islands and peninsulas. Shrubs and emergents may be used. Nests in trees are 11 to 15 m from ground, near top of the tree.	No	Heronries not observed. Only one (unconfirmed) Green Heron incidentially observed. Nesting structures absent at SAM1-4/OAO.
Colonially-nesting Bird Breeding Habitat (Ground)	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird	Rocky island or peninsula in lake or river. Close to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). (long G-list)	**Gulls and terns:** on islands or peninsulas with open water or marshy areas. **Brewers Blackbird colonies:** foundon the ground in low bushes close to streams and irrigation ditches.	No	Species at or near criteria not observed, only 1 Ring-billed Gull.
Deer Yarding Areas	White-tailed Deer	All Tall Treed forest and swamp Ecosites.	Determined by MNRF - no studies	No	No mapped areas within Study Area.
Rare Vegetation Communities					
Beach/Beach Ridge/Bar/Sand Dunes	Marram Grass (*Ammophila breviligulata),* Beach Pea (*Lathyrus japonicus*)	Central Ontario FEC: ES1, ES2. ELC Ecosites: G005-G006, G166-G168, G182-G184, G213-214	Characterized by unstable sand: Any identified beach, beach ridge, or sand dune.	No	No unstable sands in Study Area.
Shallow Atlantic Coastal Marsh	Virginia Meadowbeauty (*Rhexia virgininica*)	G143-G145, G148-G152	Shallow marsh on shallow mineral or mineral organic shoreline. Subject to low wave energy. Inland lakes and beaver ponds with fluctuating water levels.	No	No coastal areas within Study Area.
Cliffs and Talus Slopes	In 5E: primarily Precambrian rock and are typically sparsely vegetated.	Ecosites: G158-159, G166-G168, G173-G175, G182-G184, G201-G203	**Cliff:** near vertical bedrock >3m **Talus Slope:** coarse rock rubble at the base of a cliff	No	No sand barrens within Study Area
Rock Barren (Precambian)	Dry and ericacious species: Common species in Criteria guide	G163-G165, G179-G181 Central Ontario Forest Ecosites: ES8	Vegetation patchy but < 60%. Must be > 1ha.	No	No rock barrens within Study Area

Sand Barren	Veg list in Criteria Guide	G007, G215 Central Ontario Forest Ecosites: ES10	No minimum size. Vegetation can vary from patchy and barren to tree covered, but <60%. Exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion.	No	No sand barrens within Study Area
Alvar	*Penstemon hirsutus, Panicum philadelphicum, Scutellaria parvula, Rhus aromatica, Monarda fistulosa, Senecio pauperculus*	S. Ontario Sites: ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2 Central Ontario Ecosites: ES13.1, ES14.1, ES16.1, ES21.1, ES9	Alvar >0.5 ha. Vegetation cover varies from patchy to barren with <60% tree cover.	No	No Alvars within Study Area
Old Growth Forest		Ecosites: G011-G015, G017-G018, G023, G027, G033, G036, G039-G042, G048, G051, G054-G058, G064, G066, G069, G071-G075, G081, G084, G087, G089-G091, G103, G105-G107, G113, G115, G118, G120-G124 Central Ontario Forest Ecosites: ES11, ES12, ES14, ES20, ES21-ESES30	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.	No	Woodlands of qualifying size not impinged by proposed development.
Bog	*Sphagnum* moss	G126, G137-G138	Any size bog.	No	No bogs within Study Area.
Tallgrass Prairie	Big Blue Stem (*Andropogon gerardi*) Prairie Cordgrass (*Spartina pectinata*)	TPO1, TPO2 Central Ontario Ecosite: ES10	An open Tallgrass Prairie habitat has < 25% tree cover. No minimum size. Remnant sites such as railway right of ways **not** SWH.	No	No praires within Study Area.
Savannah		TPS1, TPS2, TPW1, TPW2, CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. No minimum size.	No	No non-cultural savannahs within Study Area.
Red Spruce	Red Spruce (*Picea rubens*)	G036, G051, G066, G084, G086, G100, G102, G116, G117. Central Ontario Forest Ecosites: ES 30.1, ES 30.2	Red Spruce is a shade tolerant conifer, growing best in cool, moist climate. It will grow in shallow, till soils any may grow on site unfavourable to other species such as organic soil over rock, steep slopes and wet bottomlands. No minimum size.	No	Red Spruce was not observed in Study Area
White Oak	White Oak (*Quercus alba*)	G017, G041, G057, G072, G090, G106, G121. Central Ontario Forest Ecosites: ES 14.1, ES 14.2	Forest stands containing white oak trees. No minimum size.	No	White Oak was not observed in Study Area
Specialized Habitat for Wildlife					
Waterfowl Nesting Area	Ducks	Upland habitats adjacent to: G129-G135, G142-G152. Note: includes adjacency to PSW	Extends 120 m from a wetland (>0.5 ha) or a cluster of 3 or more small wetlands (<0.5 ha) . Upland areas should be at least 120 m wide. Wood Ducks and Hooded Mergansers use cavity trees (>40cm dbh).	No	Ducks in criteria numbers not observed.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey, Bald Eagle	Forest communities directly adjacent to riparian areas - river, lakes, ponds and wetland	Nesting areas are associated with waterbodies along forested shorelines, islands, or on structures over water. Nests located on man-made objects are not included as SWH.	No	While potenital habitat exitsts, only one Merlin was observed in the Study Area. No other birds of prey observed.
Woodland Raptor Nesting Habitat	Red-taild Hawk, Great Horned Owl, Merlin, Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk	All forested ecosites. May also be found in forested swamps G128-G133.	>30 ha with > 10 ha interior habitat.	No	While potenital habitat exitsts, only one Merlin was observed in the Study Area. No other birds of prey observed.
Turtle and Lizard Nesting Areas	Midland Painted Turtle, Snapping Turtle, Northern Map Turtle, Five-lined Skink	Turtle nesting areas may be adjacent to G138, G140-149 Five-lined Skink in Central Ontario: ES14.2, ES17-ES20, ES23-ES30 or G056-G059	Nest sites within open sunny areas, close to water with soil suitable for digging. Sand and gravel beaches. Skinks will nest under logs, in stumps or under loos rock in partially wooded areas	Potential	The area SAM1-4/OAO should provide suiteable opportunities. Midland Turtles observed.
Seeps and Springs	Wild Turkey, Ruffed Grouse, Spruce Grouse, Moose, White-tailed Deer, Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often found within headwater areas within forested habitats.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream/river system.	No	No Seeps or Springs observed in Study Area
Aquatic Feeding Habitat	Moose, White-tailed Deer	Habitat may be found in any ecosite in all forested ecosites adjacent to water.	Wetlands and isolated embayments in rivers or lakes which provie an abundance of submerged aquatic vegetation are prefered. Adjacent stands of lowland conifer or mixed woods will provide cover and shade.	Potential	SAM1-4/OAO area provides suitable opportunities. Deer Tracks observed surrounding pond.

Mineral Licks	Moose, White-tailed Deer	Habitat may be found in any ecosite in all forested ecosites.	Found in upwelling groundwater and the soil around these seepage areas. Typically occurs in areas of sedimentary and volcanic bedrock	No	No Seeps or Springs observed in Study Area
Denning Sites for Mink, Otter, Marten Fisher, and Eastern Wolf	Mink, Otter, Marten, Fisher, Grey Wolf, Eastern Wolf	Habitat may be found in any ecosite in all forested ecosites.	Mink prefer shorelines dominated by coniferous or mixed forests with dens usually underground. Otters prefer undisturbed shorelines along waterbodies with fish, abundant shrubby vegetation and downed woody debris. Marten and Fisher require large tracts of coniferous or mixed forests of mature or older age classes. Denning sites are often in cavities in large trees.	Potential	SAM1-4/OAO area provides suitable opportunities, though presence of Beaver may limit use. No criteria species observed.
Amphibian Breeding Habitat (Woodland)	Woodland Frogs, Toads, Eastern Newt and Salamanders	All forested ecosites. The wetland breeding ponds (including vernal pools) may be permanent, seasonal, ephemeral, large or small in size.	Wetland, pond or woodland pool of >500 m^2 within or adjacent to wooded areas. Permanent ponds or those containing water until mid-July are preferred.	No	Criteria species not heard at required levels for significance.
Amphibian Breeding Habitat (Wetlands)	Toads, Frogs, Eastern Newt and Salamanders	Ecosites: G129-G135, G142-G152 Typically isolated (>120m) from woodland ecosites, however larger wetlands may be adjacent to woodlands.	Wetlands and pools >500m^2 isolated from woodland ecosites with high species diversity. Permanent water with abundant vegetation for bullfrogs.	Yes	Bullfrogs heard at SAM1-4/OAO and at SWMP.
Mast Producing Areas	Black Bear, White-tailed Deer, Wild Turkey, Ruffed Grouse	G015, G017, G019, G027-G028, G041-G043, G057, G059, G072, G090, G106, G108, G121 Central Ontario Forest Ecosites: ES14, ES17.1, ES23-ES26	Most important areas are mature forests >0.5ha containing numerous large beech and red oak trees that supply energy-rich mast that wildlife prefer. Sites providing long-term, relatively stable food supplies, forest openings or barrens >1ha provide excellent sites for mast producing shrubs.	No	Areas with large amounts of mast species not present in Study Area.
Habitat of Species of Conservation Concern					
Marsh Bird Breeding Habitat	Wetland Birds	Ecosites: G138-G152 For Green Heron: Above ecosites plus G129-G136	Wetlands with shallow water and emergent vegetation.	No	Criteria species not observed in BBS.
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow, Short-eared Owl	G008-G009, G020-G021, G029-G031, G044-G046, G060-G062, G077-G079, G093-G095, G109-111	Grassland and meadow >30 ha. Not being actively used for farming. Habitat established for 5 years or more.	No	Habitat without active use not present in the Study Area.
Shrub/Early Successional Bird Breeding Habitat	Willow Flycatcher, Brown Thrasher, Blue-winged Warbler, Tennessee Warbler, Prairie Warbler, Eastern Towhee, Clay-coloured Sparrow, Field Sparrow, Golden-winged Warbler	Ecosties: G009-G010, G021-G022, G031-G032, G046-G047, G062-G063, G079-G080, G095-G096, G111-G112, G134-G135	Large field areas succeeding to shrub and thicket habitats > 10 ha. Areas not actively used for farming in the last 5 years. Larger shrub thicket habitats (>30ha) are more likely to support a diversity of species.	No	Shrub and thicket habitats > 10 ha not within Study Area.
Special Concern and Rare Wildlife Species	Any species of concern or rare wildlife species	Any ELC code.	Presence of species of concern or rare wildlife species.	Yes	Eastern Wood-pewee observed in woodlands to southwest, and Golden-winged Warbler observed in woodlands on east of Study Area.